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THE DIAGNOSIS OF FEEBLE-MINDEDNESS *

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It might be contended that this is a subject of no interest to the physician, since feeble-mindedness, not being a disease, does not come within the limits of his profession. Whatever the theoretical view one might take on this matter, the fact remains that it is the physician who is, in almost all cases, first consulted in reference to feeble-mindedness. He, therefore, has the opportunity of rendering very great help in the form of advice to parents. Not only this, but feeble-mindedness has so much in common with insanity, that if the physician is to correctly diagnose insanity, he must also know feeble-mindedness, if for no other reason than to eliminate it from his consideration.

It is more than likely that some of my hearers will have scant interest in this topic, because of the feeling that they understand already how to diagnose feeble-mindedness. To such as these it becomes necessary to say at the outset, that what we mean by feeble-mindedness is not what you mean. To most people feeble-mindedness means idiocy or imbecility; that is, it means a person suffering from a defect so great that it is evident in every movement or, indeed, in his very face.

We would emphasize at the start that we are not discussing at the present time this type of feeble-mindedness. It is true, that in the case of imbecility the condition is so marked that almost any one can diagnose it. It may indeed be confused with insanity, sometimes with hysteria, with epilepsy or a few other things, but in the main there is no serious difficulty along this line. Everyone knows the "silly boy" or the "foolish girl," since every community possesses one or two of them.

We are speaking in this paper of a type of defective that is not recognized by any external mark. These people are often very fair to look on, as well developed physically, as pleasant and agreeable as any children. Experience with them shows that they are not quite like other children; they are dull or slow, or stubborn and obstinate, or in some way show that they need special training. But it is customary to find some excuse for them and to insist that we have only to be patient and they "will come out all right in the end." We now know that they do not come out all right in the end; but on the contrary, they show their defect more and more as they get older and prove to be incapable of self-support, to the sorrow of the family or to the cost of society.

The importance of this problem is recognized in an instant when we learn that at the very lowest estimate 25 per cent. of our criminals belong to this class. Perhaps 50 per cent. of our prostitutes are feeble-minded girls; the same is true of our paupers, our drunkards, our ne'er-do-wells; in fact, we now recognize that a large percentage of the various classes of people who make our social problems are mentally defective. Twenty-five per cent. is a minimum estimate, while it has been shown that in all probability 50 per cent. is much nearer the truth, and it may run even higher.

A superintendent of one reformatory for men estimates that 75 per cent. of his inmates are feeble-minded; careful tests of the girls in a reform school have shown 72 per cent. feeble-minded. In fact, wherever there are any statistics, it invariably points to the higher figure. In all of these cases an early diagnosis is of supreme importance for many reasons which will occur to you without any suggestion from me.

One or two reasons, however, I may emphasize. In the first place, contrary to the usual belief, these feeble-minded children are naturally inno-

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cent; they are not vicious or malicious; if they appear so when they get older, it is only because they have been misunderstood, and being misunderstood have been mistreated. Responsibilities have been put on them which they could not bear, and under those responsibilities they have broken down or rebelled.

The feeble-minded girls who have become prostitutes would have been saved from a life of prostitution had their feeble-mindedness been recognized early and they cared for where they would not have been led into such temptation. It is far easier and far cheaper to care for these persons in institutions or colonies for the feeble-minded than it is to care for them in jails and prisons and almshouses, or to pay the cost of their immoral lives.

Lest someone should be staggered by the large percentages that I have quoted, let me say that it is now accepted, one in every three hundred of the population is feeble-minded, with the probability that one in every two hundred is more nearly correct; or 2 per cent. of the school population, if we are thinking of the children. This at once shows us the size of the problem and the possibilities for evil if it is not at once dealt with. Apply it to your own school system, in your own city or town, and try to imagine what it means that 2 per cent. of all the children attending your public schools are feeble-minded, and therefore are potential paupers, criminals, prostitutes or drunkards; and remember, that if we would go into those schools to-day and pick out those children and take care of them, we could bring it about that they would become happy and contented, and partially useful persons. Whereas, if we neglect them as we have done in the past, they will swell the ranks of the above-mentioned classes constituting our social problems.

Without taking more time on this phase of the subject, I trust it is clear that we have here a problem of no mean proportions. As already intimated the physician has a marvelous opportunity to be helpful to society in this direction. In the past we have not recognized these people, because, as I have said, we have been looking for idiots and imbeciles. We have insisted that any child, no matter what his record, if he did not show certain stigmata of degeneration, certain conditions recognized as belonging to the idiot or imbecile, must "come out all right." Our decision in this matter has been forced on us also for other reasons.

In the first place, we do occasionally find children who are peculiar who do come out all right, and we have not been able to distinguish these from those who do not. Secondly, these children, besides being well formed and pleasing to look on, are usually very affectionate, and we cannot believe that such children are incurably defective. Again, it is an unpleasant task to tell parents that they have a feeble-minded child, and so we cling to the hope that this case is curable. We comfort ourselves by saying when we are in doubt: It is better to err in the right direction. I would remind you that there is no right direction. Error is error, and error is serious, and our decisions may bring untold loss in the future.

Small-pox is now fortunately so rare that many a practicing physician has never seen a case. Imagine a physician diagnosing a case and being in doubt as to whether it is small-pox or measles, and concluding that he will be on the safe side and call it the milder disease, measles! The consequences might be something terrible to contemplate.

No less serious is it to call a child who is feeble-minded simply a case of slowness, and to assure the parents that he will come out all right. So much for the seriousness of the problem and the necessity for an early diagnosis.

We come to our central problem, "How shall we diagnose?" What are the signs or symptoms? This is no easy question; the symptoms are not easy to describe. A person who has had long experience, of months or years, with known cases of feeble-mindedness such as are found in our institutions, easily recognizes the fact, although he is not always able to tell just how he knows. It is the old problem of the expert who recognizes things within his line, where the inexperienced cannot see any indications whatever. I have seen such experts go into a schoolroom of supposedly normal children, and after looking about for a few minutes, pick out the three defective children in the room, even though to the casual observer they showed no difference from the other children, and yet the teacher reluctantly admitted that they were her dull pupils. It then proved that they were more than dull, they were strictly feeble-minded. I have seen experts at the immigration station pick out the Russians or Italians or Scandinavians as they pass along the line, and careful psychologic tests later proved that they were absolutely correct in considering them feeble-minded.

The physician has usually no opportunity to become an expert of this character. Of course, if he cares to do so, he can specialize in this and in time become quite an expert in detecting such

children, but it is not the purpose of this paper to attempt to make of the physician an expert detector of feeble-mindedness; but the physician may easily learn enough about the problem to become wise enough to suspect feeble-mindedness when a "peculiar" child is brought to him; he will then do just what he does in cases of disease or conditions where he does not claim to be an expert, he will turn them over to the one who is an expert.

Now what are the things that will make anyone suspicious? The first thing is the most obvious, that the child is backward in school, or dull or slow in his development. A child who has been in school regularly and is two or three years behind his grade is so suspicious that it is almost certain that he is feeble-minded. A boy or girl who has grown to be 15 or 16 years old and still prefers to play with children of 6 or 8 or 10 years of age is very suspicious.

We hear a great deal about speech defect, and there are, it is true, some speech defects that are cured. There are some children who do not learn to speak until they are 4 or 5 years of age, and then learn and prove to be entirely normal, but we must recognize, as a matter of fact, that these are the exceptions, and a child that is two or three years late in learning to talk is decidedly suspicious, and the probability is very great that he does not talk because he has not any mind, or, at least, not enough to pick up language as the normal child does.

I have told you that the good appearance of the child physically does not warrant us in concluding that he is normal mentally or will become so later.

Let me call your attention to some other things. A child comes in for examination and we find that he comes from a poor home, from bad environment, that he has not had enough to eat, and is clearly a case of malnutrition. We find that he is two or three years backward, but we say that malnutrition is the cause of this, and he has only to be fed up and he will completely regain his lost ground. In this connection I only need to remind you that malnutrition, indeed, even starvation, does not produce feeble-mindedness. It will not affect the nervous system and the brain so as to make the child as much as three years backward. If he has that degree of backwardness, it is due to something more fundamental than malnutrition. The truth of this you will accept when you recall the fact that the entire organism is strangely resistant to starvation, and that of all the tissues of the body, the nervous system is most resistant. This has proved to be true, both in man and in animals.

A very great help in the diagnosis of these cases is a knowledge of the family history. If observation and questioning of the condition of the parents or other relatives show that there were among them those who were never able to take care of their families, or, in the terms of the definition, "to manage their own affairs with ordinary prudence," then we have a strong probability that it is a case of hereditary feeble-mindedness.

I cannot take time in this paper to discuss the various methods of psychologic examination, the so-called tests of intelligence. I can only say in passing that those of you who are interested to take up some phase of this cannot do better than to study the Binet-Simon measuring scale of intelligence. When you read this over you will undoubtedly say, as we all did, that it is too simple to be efficient, and yet it has proved and is daily proving to be marvelously accurate and helpful. In the hands of the experienced person this scale will diagnose feeble-mindedness to a fineness and an accuracy that is little less than marvelous.

In conclusion, let me say, that while there is still a great deal to be learned about this matter of the feeble-minded, enough has already been discovered to make us feel safe in saying that the usual excuses that we give for a child's backwardness or peculiarity are not safe excuses. We know enough already to justify us in our conviction that the child who does not develop like other children is very probably feeble-minded, and if we are not satisfied to pronounce this verdict, it is at least wise for us to turn him over to someone who can give expert advice. At least we should not put to sleep the parents' suspicion, thereby putting off the day when they will proceed to a right treatment of the case, but rather we should recommend that the child be sent to an expert and given a careful psychologic examination.

While, as I have reiterated, the problem is one for the specialist, yet every physician can do much toward helping out this matter, and by so doing will confer a benefit on society, as great as anything he can do and fully comparable to the service he renders when he disposes wisely of a case of small-pox or plague.

SOME TYPES OF THE FEEBLE-MINDED *

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Since anything like a systematic or even orderly study of the feeble-minded began, it has been customary to designate certain groups on account of characteristic physical or mental findings. It has been a fairly common fault to such grouping that the characteristics brought out were often more or less indefinite, lacking in clear-cut qualities that would permit ease of differentiation. No perfect classification seems to have been evolved, but steps are being made apparently in the right direction.

While I have nothing basically new to add as regards the present system of grouping or study of these children, there are several points that may be brought to notice and so develop helpful discussion. Owing to the large number of papers for this meeting, statistical tables have been dispensed with, but it is my purpose to discuss briefly some of the results in a study of upward of 2,000 mental defectives.

It may be new to some of you to learn that a favorite reference in each book of the older authors dealt with such defectives as were fancied to have a physical resemblance to representative racial types. Thus there were to be found the "North American Indian" type, the "Negroid," the "Malay," the "Mongol," etc. Those working with the feeble-minded will be perfectly familiar with this terminology. As an important consideration in the present-day methods of study the Mongol alone survives.

In my contact with mentally deficient children, I have been denied seeing a child that I could conscientiously classify under the heading "North American Indian" type, even stretching my imagination to get him to look like a red-skin; two "Negroid" discoveries turned out to have pathologic bases for their appearance and that collection ended; and we have also failed to observe an example of the "Malay" type. Of Mongolians, however, there has been a considerable number—about 40 in all—and constituting 1.7 per cent. of the total cases. This percentage of incidence is somewhat lower than made by other observers—Treadgold giving as high as 4 per cent. of all aments. While the fact that the majority of children under this heading are affectionate, likeable and comparatively easy to care for at home may account for them not being steady residents of institutions, sooner or later they are given a trial to see if they will not improve mentally under training; therefore, the general run can be included in the statistical tables. The claim that the Mongols are increasing in numbers with regard to relative as well as absolute figures we have not found substantiated by our records.

Etiologically, our efforts have shown nothing that would throw further light, except that the proportion of cases due to luetic origin, or at least associated with syphilitic ancestry, has been surprisingly large. Over 50 per cent. of our cases give either undoubted or strongly suspicious evidence of this disease. In this connection I may say that our Wassermann tests are not yet finished, but we expect to get the results tabulated in the near future.

I have had opportunity in only two cases to diagnose Mongolism during early infancy—these not being institution inmates. The fathers of these infants had both acquired syphilis to my personal knowledge, one father undergoing an attack of cerebral syphilis several years preceding the child's birth.

Our statistics do not show a distinct relationship between a Mongolian child and parents of rather advanced years at time of conception, though there were several suggestive instances, the father being well advanced in age. And while several of these children were the last born of large families, such occurrences made up a minority.

The remarkable physical resemblance so often seen in typical Mongols, causing them to appear like brothers and sisters, makes it seem probable that some deficiency of one of the ductless glands is responsible for the uniform grouping of physical abnormalities. The diagonally placed palpebral fissures, the rough transversely fissured tongue with its enlarged circumvallate papillae, the pitcher-shaped ears, the high cephalic index, the tendency to chronic inflammation of the mucous membranes and general harshness of the skin, and the spade-like hands and feet are conditions most constantly met with; to a lesser degree one finds the prominent abdomen, redness and flat appearance of the face with the external openings of the nose pointing forward instead of downward, deformities of the thorax, knock-knee, flat foot, thumbs and little fingers too short and hyperextensibility of the joints; this being especially marked in the hands. Our cases have suggested that previously enough importance has not been ascribed to the frequency of mucous membrane and skin involvement in diagnosing Mongolism; it is certain that we have found this

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abnormality more constantly present than any other—not even excepting the peculiarly marked tongue, which latter has been claimed to be pathognomonic. This we have not found to be so, an examination of the tongues of our children revealing a number who have characteristic tongues, but no other features that would suggest this state.

Suffice it to observe in this connection that the above signs, in addition to a reduced bodily stature and general lack of resistiveness to disease invasion, indicate such a profound disturbance of the centers of nutritional control that when the causative factors are really understood it will mean a probable revolution in our present-day ideas of metabolism. Herein lies one of the chief values of thoroughly studying the Mongolian type. A brilliant discovery can easily be followed by an epoch-making era in medicine.

In passing from a consideration of this type it is only fair to call attention to the poorness and superficial quality of the term Mongolism. The fact of the matter is that while the children so referred to have often a most striking and characteristic physical resemblance to each other, that resemblance is but fanciful as applied to the Mongolian race. The name was first used because of the oblique position of the eyeslits, but the grouping of signs often occurs without this deformity being marked. When one remembers, in addition, that the Mongolian child does not often exceed four years of intelligence age as tested by the Binet-Simon scale, it is small wonder that the "Yankees of the Orient" are prone to object to this nomenclature.

The Cretinic.—Though radically different in a number of ways cretins and Mongols also present points which are quite liable to make the one type suggestive of the other. This similarity has been recognized by writers who have outlined a differential analysis in their discussions of the two subjects. Only the atypical forms are likely to cause confusion. The cretin has the short massive build with misshapen extremities, thick chest, lumbar lordosis and the skin generally presenting a tawny, pudgy appearance; the head is proportionately large, the cranium being brachycephalic, the eyes small and set far apart, and the eyelids having a puffy appearance that would suggest a nephritic lesion to the practitioner; the cheeks are large, the lips thick, and the tongue large and often protruding.

As is well known a congenital or at least early loss of thyroid gland functioning is the cause. Why this loss of function should exist has been variously ascribed to climatic conditions, to the water and food ingested, to the lack of sufficient sunshine, etc. Some observers feel assured that deficient or abnormal thyroid functioning in the mother is responsible. Some deny that heredity plays a part. While our cases have been comparatively few the investigation of the family histories certainly revealed that each child sprung from a decidedly faulty and neurotic ancestry. We found insanity, epilepsy, alcoholism and syphilis, as well as tuberculosis in one or the other of the family histories and not one but had either one or both parents subnormal or neuropathic.

While the cretinic children themselves, if taken early enough, will improve wonderfully under the judicious administration of thyroid, I have not personally come in contact with such a child who was thus restored to normality—especially insofar as mental condition was concerned. The majority of our cretins have entered when close to puberty or even later than that period. These children have all been treated with standard preparations of thyroid, two of our most pronounced cases, aged 24 years and 44 years, respectively, being constantly under this treatment for three years. Nothing but the most superficial grade of either mental or physical improvement was noted. These children, who seem to be no longer susceptible to thyroid, test 3 years and 5 years, respectively, by the Binet intelligence scale. Another child who has received thyroid treatment since early infancy up to the age of 11 years showed at that time a pronounced impediment of speech with a retardation of three years in intelligence. It seems only a coincidence, but all of our five cases were girls.

Microcephaly.—The microcephalic type is one in which, of course, the name is derived from a single feature instead of a grouping, as in Mongolism. A consideration of microcephaly follows that of cretinism because we have been struck by the similarity of mental reactions in the two types as contrasted with the marked physical dissimilarities. Both kinds of children are reticent and modest to a degree before strangers, and yet quite gentle and affectionate with their attendants. They like exceedingly well to be praised and when only those with whom they are familiar are present they are very much at home, even to performing little acts, dance or mimicry, and feel highly appreciative at the applause elicited. They are quick-tempered, showing flashes of anger over trivial things, from which they soon recover their usual state of composure, however. And in general the traits and habits

of cretins and microcephalics run along in much the same channels.

The Binet examinations of the microcephalics have shown them to average about 4 years in intelligence age, though the range in years is wider than that of the Mongols. John is a boy who is a braggart and has innocent but exaggerated ideas about his ability—for instance, to write letters (these are illegible), or to perform prodigious amounts of work. He is quite jealous of his position as a dining-room helper and also thinks it undignified and unbecoming for him to accept additional work in other departments when emergencies arise. His head circumference measures 18¼ inches (45⅝ cm.), and contrary to the usual finding in microcephalics he articulates very well, though his phonation is somewhat raucous.

On the other hand, we have Alice, who is considerably under the one-year intelligence level, and is practically vegetative in her existence, requiring the same care as an infant. Her head circumference is 18½ inches (46¼ cm.)—somewhat larger than that of John.

Susie, who was our most striking case of microcephaly — head circumference measuring 14½ inches (36¼ cm.) and who died several years ago of pulmonary tuberculosis, could sing the chorus of "Just Break the News to Mother" fairly creditably. She was fond of little fineries in the way of dress and ornament. She was inclined to be headstrong in disposition and to order about other children who were of much higher intelligence than she, they acceding because Susie was a prime favorite.

What is meant to be emphasized is that the size of the brain does not necessarily influence the amount of intelligence in the microcephalic. In consulting our mortality records we find ample proof of their marked susceptbility to pulmonary tuberculosis, practically all cases dying of this malady before the 35th year of life.

The microcephalic type constitutes, according to our statistics, about 1.4 per cent. of the total population. We find faulty ancestry in practically all cases.

Insane Feeble-Minded.—Though this group can hardly be styled a "type," it forms so large a proportion of our population that it is hoped a brief reference to the subject will be pardoned. In my census of our insane cases those were included who, as they grew older, developed a terminal dementia, a state common to a good many of the older cases in institutions for the feeble-minded. In the count those were listed who had given evidence of a noticeable deterioration from their former level of intelligence. Such retrogression was found to exist varying from that of a mild degree of dementia to one of profound stupor. We noticed that the most rapid and striking examples were those appearing in conjunction with pulmonary tuberculosis, two cases of 11 years and 13 years, respectively, descending from the low grade moron group to the idiot level in the short period of three months. Less pronounced instances occurred with a number of other cases of phthisis, a disease to which the feeble-minded are particularly susceptible.

Of all those who gave undoubted insane reactions in one form or another the rather unexpected total of 11 per cent. of our whole population was found. This is more than double the figures given as an estimate for insanity in all aments by the Royal Commission in England. The writer is unable to state whether or not their estimate included what he has pleased to call terminal dementia of the feeble-minded.

In grouping our cases of insane, 35 per cent. of the total is included in the terminal dementia group. An equal percentage is comprised by the dementia praecox forms, which far outnumber any of the other active varieties of the insane. Though we meet an occasional child who exhibits more or less catatonia the hebephrenic class is by far the more common; the paranoid forms under the group paranoic states, which furnish about 5 per cent of the total. The involutional states, including melancholia, add another 4 per cent., while the greater part of the remaining cases are of the demented and maniacal forms of epileptic insanity. We have at present a little girl, aged 12 years, who is an excellent example of juvenile dementia paralytica. There has been no instance noted of what we could consider a pure manic depression among our children. This is a variety which must be rare among feeble-minded if our experience can be taken as a criterion.

The greater number of our insane children do not go to the extremes of either exaltation or depression such as do the ordinary insane. Once in a while we have a case who develops a tendency to do himself or those about him bodily harm, and for that reason is committed to some institution for the insane, but the majority are cared for as best we can, often giving but little trouble on account of their failure to show the more radical signs of insanity.

In closing this rather rambling paper I beg to be allowed to digress for a moment to comment on the lack of interest which the general practitioner of medicine exhibits toward the insane and the feeble-minded. By the most reliable

estimate we now have at least one out of every 300 persons who is insane. This is true also as regards the proportion for feeble-minded. It seems that the average physician feels disposed to regard the handling of these two classes as specialties, which indeed they are, but we must consider that great numbers are at large in the various communities, being totally without special care. In several ways they are a menace to public welfare and economy. As both insanity and feeble-mindedness are abnormal states that require supervision and correction, both for present needs and future betterment of conditions, it is the duty of medical men in general to study and learn more about abnormal mental states from the practical as well as the scientific side. Many of the admission papers accompanying cases to public institutions reveal a most woeful lack of knowledge about matters of psychiatry. Practically all of these unfortunates are disposed of by medical men and many errors are made in preliminary attention that could have been easily avoided. It is a big campaign of education along these lines for the public that is now on. The teachers and educators in this campaign must be prepared for their work. There is a live problem to be solved, having in it more elements medical than we have realized. It is a hard problem, too—not one that is going to be solved to-morrow, or next week, or next month, or next year. It is too big and broad and comprehensive for a mere handful of specialists to deal with properly. It requires concerted action from all of us who are concerned in the future welfare and conservation of the human race, not only physicians, but people from any and all walks of life, people who are imbued with a feeling of responsibility for the continued stability of our race. It is fine to think that each one of us can be an agent and a power in shaping the destiny of mankind, a destiny that really depends on our intelligent cooperation for the common good. Let us work just a little bit harder to take part in this labor of helping to mould a better standard of human life than we now have, a work which will stand as a monument to our far-sightedness.

DISCUSSION ON THE PAPERS OF DRS. GODDARD AND CALDWELL

Dr. Carl W. Sawyer, the Sawyer Sanatorium, White Oaks Farm, Marion, Ohio: *Mr. Chairman*—I think we are particularly fortunate in having these two papers this evening, one of them dealing with the subject truly from a psychopathic side, and the other from a pathological side. Feeble-mindedness is one of the conditions which we have always had with us, and probably always will have with us; but within the past few years there have been some great strides made, showing that the chances are that we will not have so much of it in the future as we have in the past—neither in the number of cases developing nor in the number of cases that come to the terminal stages. A long time ago these children used to be pushed aside if they did not show a certain amount of mentality—they were simply put aside and nothing done for them. I think that was when the state had not yet taken hold of the subject. I don't know just when the beginning of the pathological work commenced with these children. Of course one of the early strides that was made was when myxedema was picked out and that class of children set aside and treated. Next came the cretins that were helped.

My experience has been a little different from Dr. Caldwell's. I have seen several cases of cretinism that were helped by the thyroid extract, and if Dr. Harvey Cushing's recent work is of any value we know that we are going to be able to help some that we have not been able to help in the past, and help feeble-minded children by work along that line. I recently spent some time with Dr. Cushing, and am convinced that his work will open up great avenues in this field.

All of these feeble-minded children should first come into the hands of the doctor, because we know positively that a large number of the cases of feeble-mindedness are really sick children. We have all read in the papers of the remarkable cures of feeble-minded children who could not see well, and children who could not hear well, by treating these defects. As soon as these conditions of sight and hearing were helped they were made better. That is only a small percentage of the good that can be done in this way. Take the Mongolian—I believe there will be some kind of treatment found to help that type also—the cretins, the myxedema cases—they all belong on the pathological side and must be held as sick children and met by medical measures, or at least met by the doctor—not necessarily by surgical measures.

Then we must take, on the other hand, the children who come into the world defectives, with the small heads, the large heads, brains absolutely held back, who never will build up. Those cases must be taken, after it has been proved that nothing can be done for them from a surgical or medical standpoint, and be taught. Once in a while we find one who can be helped.

If any of you have read Dr. Goddard's work you will notice two things that he brings out very clearly, and I think they are of very great importance in these cases, on the teaching side, and that is, that you must not hope to make an all-around individual of one of these feeble-minded children. He says, you may make a very good bulldog out of a bulldog, but you never can make a pointer out of that dog—and so with these children. You must find in what way they can best be developed, and then in that way make members of society who can sustain themselves. Secondly, if a child shows the mentality of a child of 7, the chances are that you can never raise that child more than three years.

Day before yesterday, just before I left home, I had one of these children brought to me, and when I told the mother that, she felt absolutely hopeless about it, but when I explained this to her, which I believe to be the facts in the case, she saw the possibilities. I believe that these children to a great extent follow the rule, if I remember my arithmetic

correctly, of what we used to call the greatest common divisor. If we know that one individual has ten letters from the alphabet, another fifteen, and another twenty letters, and the other has the full twenty-six letters, we know that the individual who has the fifteen letters will be more able to make words and make a larger number of words and a greater variety and larger sentences than the individual with ten letters, and so the one with twenty will have greater ability than the one with fifteen, and the one with twenty-six will have the ability of a normal individual. That is the situation with these children, I believe. We have one child coming in with a mentality of three, another with the mentality of seven, and so on. As I have said, and Dr. Goddard says, we never can raise them more than a little above that, but we can teach them how to make more combinations with the few things they have. And that, I believe, is the salvation of the teaching of these children. If we leave them alone the child of 3 will never develop much more, because he never learns to combine the things he has; but if we help him by teaching him how to make more combinations, he will seem after a while to be a more normal individual. The same is true of the child of 7, who, after you show him all the possibilities, will seem nearly like a normal individual, very far above 7 years of age.

One other thing. I believe absolutely that the doctor should see these cases first, because I know of children who have been held back and made feeble-minded who in the beginning were not in any sense of the word feeble-minded. One case I saw this spring—the son of a doctor, a practicing physician, who understands general medicine as well as the average practitioner. He had three children in his family—two perfectly normal and the third one not. When the child had gotten up to 7 years of age the family found that he could not get along with the other two, one 10 and the other 4, and so he was sent to us as a feeble-minded child. It did not take us long after seeing him to realize that if he was feeble-minded he was an exceptional type. There was another thing in this case, that if he was feeble-minded, the degeneration which had occurred had also invaded other areas, especially the cerebellum and the motor areas in the cerebrum. We took the child and worked him out. We found that the reason why he was feeble-minded was because of an attack of Friedreich's ataxia. Because of this he could not handle himself as others, and could not stand up with the rest of them, and consequently he had to sit down and play differently. He had shown that he was exceptionally bright, because he realized his condition and did not try to do things which he could not do. This child was put on appropriate measures to meet the Friedreich's ataxia. I am glad to say that he is improving remarkably. Then he was put in the hands of a woman who cares for these children for us, and who puts them on Montessori work. It is interesting to see what can be done in this way. He had never been able to learn letters in five years of teaching, and his mother was at one time a schoolteacher. The child is now able to do a large number of things. Here was a child who was not feeble-minded, in any sense of the word. His brain is more alert, we find now, than the brain of a normal child, and if we put him in an environment where he can meet the conditions he is just as good and equal to any individual, and if we are able to hold down the Friedreich's ataxia this youngster is going to make a perfectly capable individual mentally, and probably physically. And there, I believe, is one of the points where we fall down too often. We class the child as mentally deficient when really he is physically deficient.

Another child I saw just recently was of the Moron type. I did not see him until he was 11. Looking at him, he presented a pinched appearance, with marked pallor and a number of signs of degeneracy. His mother said these had existed all his life. She spoke to her family physician about him and he told her to wait and see. And there, I believe, is a great danger—waiting. I believe if that child had been taken early he could have been helped more.

So I think that we are very fortunate in having both sides of this proposition brought out to-night, because feeble-mindedness has drifted into two definite channels—the psychical or psychological side and the pathological side, and I think the pathological side comes first, and the doctor should see these children first.

Dr. A. M. Corwin, 15 East Washington street, Chicago: The two papers we have just listened to are certainly of great interest to the generalist and specialist even outside of the group of neurologists and psychiatrists. The gentleman who has just spoken brought out a point that was in my own mind, and that is the correlation between the psychology, the normal, and psychiatry, the abnormal. Physiology and pathology should work together in this field. The reader of the first paper laid somewhat definite emphasis on the intellect. We speak of the Moron, imbecile and idiot. The tests for these are very largely intellectual tests. Is it not likely that you gentlemen, as physicians and psychiatrists, are apt to lay too much emphasis on merely the intellectual side of the individual, and forget that he is also made up of will and of emotions and of conscience—the moral side? Whether the conscience be a separate function of the mind or whether it is a combination of intellect, will and emotions is not germane here. Consider the man, then, or the individual as four-sided—intellect, will, emotion and moral function—and you must concede that we must study these individuals as they come into the world and blossom or fail to blossom in perfection from these four sides, and not simply take up the intellect and say, because a man or individual is not bright, therefore he is feeble-minded. The prostitute, the criminal and other charges on society are defective in one or more of the soul functions. The last speaker has indicated in his discussion that the individual child may be wonderfully bright and yet be very lacking or unbalanced in the emotional side and be perhaps headstrong, over-developed on the side of the will.

It is a question whether the psychiatrist, neurologist and physician who study the child all the way up are interested in the sociological problems wrapped up in this great question. They should study him, as I said before, from all of these angles, in order to make a proper diagnosis of the case and to apply the proper treatment and make the proper prognosis. That feeble-mindedness is not on the increase or is on the increase, I am not able to say. Some of you say that it is, and some of you that it is not. But one thing is certain, as long as physicians take a back seat on the question of the morals of society—

the social evil, and fail to do their part in solving this primal question, into which syphilis enters, in the degeneration of the race; so long as alcohol has free rein in the community, just so long will this question of feeble-mindedness, idiocy, the Moron, and all the rest of the stages and varieties of defectives in mind and character, whether in intellect, emotion or will, be before us, and just so long will the ranks of these people be recruited beyond our ability to control them. If a conference of this sort has any duty, it seems to me that that duty is to go on record strongly against the influences that recruit this class of patients. Prevention is the call of the hour. Let us look after causes and seek to eradicate them while trying to care for the results.

Miss Clara Schmidt, 6022 Monroe avenue, Chicago: I want to correct a statement made by one of the speakers. He remarked that we have no means in the city of Chicago for the education of defective children in the schools. We now have forty-one such rooms in the city, and there are in these rooms something like 700 children who are found to be defectives to such an extent that they cannot carry on the work of the public school along with normal children. I have recently joined the Department of Child Study, and I would like to tell you a few things about getting these children started and getting the right things done for them. In the first place, the teachers in these subnormal rooms have not special training. They did some years ago start out to give these teachers a year of special training, and also give them an extra salary, in order to induce them to take up this work. After some teachers had taken their year off and gone into the work then they had to go on as before with no larger salary than the teachers who are doing the work in the normal grades. So that our first difficulty is in getting teachers who have any sort of understanding of the problems with which they are confronted. However, they are nevertheless doing wonderful work. We have ten of these rooms which have been created in the last six months. The other thirty-one have been in existence from one to ten years. Some of these teachers have, nevertheless, gone to work at their own expense to study their own problems, and so far as the intellectual training of the children is concerned many of them are doing some very fine work. They get children of all sorts—children of the upper grade, of the Moron group, down to the child who has not yet acquired language. We have these difficulties: Most of these children come from the poor classes of society. They are most of them very much in need of medical care. They come into the Department of Child Study and get such physical examination as it is possible to give them there. It is determined whether or not they have sense defects (or other correctable physical defects) or are the victims of malnutrition, and as much of their history is obtained as is possible under the circumstances. Many of these children are in need of charity, in need of charitable medical treatment—many more than can be taken care of. The health department school nurses are very conscientious in trying to obtain it for them, but there are too many. There are not clinics enough to accommodate all these children and give them the careful care which they need. So that is another handicap.

The most serious difficulty for which we have no remedy is the poor home condition. We may get our child medically taken care of, his large tonsils and adenoids removed, his vision corrected with glasses, and the mother advised by the nurse as to proper diet, but this, because of poverty and ignorance in the home, he cannot get. In spite of all these handicaps, however, the special teachers in the subnormal rooms are able to do much in the education of these children.

Dr. Anna Blount, Oak Park, Ill.: I would like to take the liberty of recommending to the reading of everyone here Dr. Goddard's splendid book on "The Kallikak Family." I think it is more interesting than any romance I have read in recent years. It traces the history of the antecedents on both sides of a high-grade Moron girl who was in the Vineland institution, and traces it back for six generations to prerevolutionary days. It will well reward the time of study of any physician who may be interested in the subject of feeble-mindedness, and I think when you have read it you will be of the opinion that Dr. Goddard himself holds that the way to handle the question of the feeble-minded is not to breed them.

Dr. S. D. Wilgus, Kankakee, Ill.: As a state officer I just want to make a few brief statements, and ask Dr. Caldwell to make a statement in answer to one question based on the question of fact. In a mixed audience of this kind I think this point ought to be understood. In the first place (1) if one out of every 300 of the population is feeble-minded, that gives 20,000 in the State of Illinois. The second point which might be mentioned is (2) that a degenerate never is a progenitor of normal strain. The third point is (3) that heredity from such an individual may be similar—that is, the descendants may be degenerate in the same line, or they may be dissimilar—that is, the descendants may be insane, epileptics, alcoholics, or what not.

The question which I would like to ask Dr. Caldwell to answer in favor of this audience is what legal hold they have at Lincoln State Hospital on the 2,000 feeble-minded of the 20,000 of the state?

Dr. C. B. Caldwell, Lincoln, Ill. (closing): Dr. Corwin inquired why it was that in the mental examination of these children the Binet system, which had to do only with intelligence, was considered and the other mental attributes, such as will, emotion, etc., were omitted. Work is being done at the present time which will involve tests and observations on the subject of learning and memory; feelings, interests, instincts, temperament and attitude; self and social relations and all other qualities of the mind. These things *are* being considered. So far intelligence is the only one in which more or less definite and accurate measurements can be made and for this reason the Binet Scale assumes the importance it now holds. Intelligence is a function of all other mental attributes and its measurement makes about the best single means we now have of gauging mind.

Dr. Butler made the statement that he and his assistants were often in a quandary what to do with a feeble-minded patient. He said that occasionally a child who was obviously subnormal came before his clinic, and if an epileptic or a decided idiot he was sent to Lincoln. It would be interesting to know just what system he uses in picking out cases to be sent to Lincoln. While there are a great many epileptics in the Lincoln State School and Colony, it is not necessarily an institution for epileptics; in fact, it was created by a legislative act to educate these children. This is what we are endeavoring to do, and

I would advise that the doctor occasionally send one of his improvable cases to Lincoln. If he is in a quandary about what to do with such cases and is really sincere about their welfare, he is a man we need in the movement for the betterment of the feeble-minded. Dr. Butler spoke about the handling or treatment of defectives which, of course, is a subject in itself and was not meant to be comprehended in the scope of this paper. I am interested to know that the lady who is doing work with subnormal children in the Chicago public schools corrected Dr. Butler's idea that there were two rooms devoted to the care of this class and informed him that, instead, there were forty-one rooms for this purpose.

Dr. Wilgus has asked if the state institution of Illinois has a definite hold on these children. In reply to this I will say that there is no commitment law on the Illinois statute which governs this point. Occasionally a judge from one of the county courts commits a child to the Lincoln State School and Colony, but his doing so constitutes simply a "bluff." There seems to be no insistent demand for a statute of this kind, and, consequently, things have been allowed to go on in an unsatisfactory way. As a rule the parents, who are most vitally interested in the children of our institution, are neurotic—probably as high as 80 per cent. of them. They come to us requesting that the child be released and we say, "Judge so and so committed this child here. You will have to get an order from his court before we will release the child." That is done simply to protect the child from the world at large and is also simply a "bluff." Once in a while a parent gets out a writ of habeas corpus and, of course, we surrender the child.

Dr. Moyer has asked if a normal child may be born to feeble-minded parents. This could not possibly be.

THE PSYCHOLOGIC CLINIC AS A EUGENIC AGENCY *

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Eugenics, in its efforts to guide and control the actions and condition of men in such a manner that the actions and condition of future men will reach a higher plane, calls for aid on all those who really know man, physically, mentally or socially. The naturalist, physician, psychologist, socialist, lawyer and statistician are all pressed into the service; each contributes something which the other is powerless to give.

The purpose of this article is to outline a very practical service which the psychologist can render at the present critical juncture in the effort to prevent the *increase* of the already appalling large feeble-minded population.

In my judgment there is no existing condition more menacing to the future of our race, no condition which contributes more to the crime and vice of this generation and to degeneration in the next than the fact that there are an estimated 276,000 feeble-minded persons *unrestricted* and *unprotected* in the community, some 18,000 of them in Illinois.

The average citizen when he learns that institutions such as the Lincoln State School are duplicated in most sections of the country, and that altogether they care for about 24,000 helpless children, goes home with a feeling of horror that such conditions exist. The horror is mitigated, however, by a sense of satisfaction in that the state is so well performing its duty. He is not told that if the capacity of these institutions was increased *ten fold* there would still be feeble-minded on the outside. He is not told that the majority of those on the outside force the state to care for them—not in institutions designed for the feeble-minded—but in prisons, reformatories and alms houses, to which they make their way again and again during their miserably inefficient careers.

The state recognizes the incapacity of the 24,000 and provides them with protection; the incapacity of the 276,000 it does not recognize, and these absolutely irresponsible individuals are allowed liberty to do their worst and are then punished with the penalties designed for normal offenders.

As a result, penal statistics wherever collected, show that a large proportion of the criminal class are mentally unfit. The most extensive study of this kind is that offered in the Report of the Royal Commission on the Care and Control of the Feeble-Minded (1908). This Commission found that in some prisons, among them Halloway, Pentonville and Parkhurst, the proportion of feeble-minded was so large that the Prison Commission found it necessary to make special provision for their care and treatment. At Halloway, 39 of 803 women prisoners, and 56 of a total of 1,297 prisoners were feeble-minded. At Pentonville 18 per cent. of the prison population and 40 per cent. of the juvenile prisoners were feeble-minded. At Parkhurst there were 111 weak-minded, all but 35 of whom were recidivists; 2 had been committed over thirty times, 4 over twenty and 27 over ten times. At this prison a labor colony for weak-minded prisoners has been organized and cases from other prisons are received by transfer. In the State Criminal Lunatic Asylum at Broadmore 16 per cent. of the patients are reported as cases of congenital or infantile mental deficiency. In our own country the Elmira Reformatory reports

* Read at a meeting of alienists and neurologists, under the auspices of the Chicago Medical Society, June 23, 1913.

that 30 per cent. of 5,000 consecutive admissions were defective mentally, and the Bedford Reformatory that of 300 inmates, 44 were feeble-minded. Twenty-one of these women had brought into the world twenty-five children, all but three of them illegitimate. Reports from poor farms and alms houses reveal these institutions as refuges for those feeble-minded who escape the prisons and reform schools.

The state thus actually supports these people during a great part of their lives, and allows them freedom to commit crime and bear children during the intervals. The state supports at great expense charitable and penal institutions, partially for the purpose of protecting the community from its weaker members, and fails utterly to secure this end. It fails because the feeble-minded quota of its prison, reformatory and poor farm charges are incapable of learning to care for themselves in the community. These people are, of course, not the lowest type of feeble-minded whose total helplessness compels institution care, but the type whose deficiency only shows itself in response to careful tests or the actual stress of life. These people are not vicious, they are merely rudderless, without ideals or motives to guide their actions in times of stress, and they yield at once to temptation and even to suggestion that does not tempt. Nothing can secure to them harmless and unharmed lives but segregation in suitable institutions.

The institutions for the feeble-minded are at the present time euthenic institutions merely. Even in this capacity they are inadequate, for, as already stated, their protection is offered to very few of the vast number who are in need of it. These institutions are, however, in position to assist the eugenic movement in a most vital way — *by totally and permanently segregating* their charges, and thus preventing further propagation from these feeble-minded stocks. Instead of performing this eugenic duty to humanity these institutions are absolutely *non-eugenic* in character. Like poorhouses, prisons and reformatories, they care for many of their charges only periodically, allowing them to return to their homes for short or long periods, and for all time if their guardians require it. The institutions keep them for a time, put them in good physical condition, and then send them forth (as Mr. McCullough says in reference to the pauper) with the benediction—"Be fruitful and multiply."

The extent of the evil can only be realized by those who know the great part heredity plays in the production of feeble-mindedness. During the last few years the pedigrees of a large number of institution cases have been traced and published. The pedigrees have led to three conclusions: that a normal child never results from the union of two feeble-minded persons; that feeble-minded children frequently result when only one parent is feeble-minded, and that a normal person the child of a feeble-minded parent is capable of transmitting the feeble-minded taint.

Dr. H. H. Goddard, in his "Kallakak Family," reports a wonderful natural experiment in heredity. This family history states that a young man of good stock became the father by a feeble-minded girl, of an illegitimate feeble-minded son. This boy in turn married, and of his descendents, 486 have been traced, of whom 143 are feeble-minded, 46 normal and the remainder undetermined. The 143 feeble-minded individuals married into other families and altogether 1,146 persons have been recorded, of whom 262 are feeble-minded. The family-tree reeks with feeble-mindedness, epilepsy, alcoholism and criminality. The same young man of good stock who fathered this degenerate family later married a normal woman, and the descendents from this union have also been traced. Nowhere among them is there evidence of the feeble-minded taint.

In the Lincoln State School and Colony sixty-six families are represented by two or more children each; seven families by four each, twelve by three each, and forty-eight by two each. In many instances other members of these families are being cared for in the insane asylums, reform schools, prisons or poor-farms. There are at Lincoln four brothers, aged 7, 11, 14 and 17, all of whom rank four years in intelligence, and all of whom have the same mannerisms; there are twin girls, aged 23 years, who are practically identical in mental age, mannerisms and personal peculiarities; there are two brothers aged 23 and 13, respectively, neither of whom have passed the mental age of 1; there are two sisters aged 10 and 14, respectively, both of whom grade 7 years in intelligence. Most convincing of all, there are two sisters, aged 20 and 22, respectively, who, when very young, were adopted by different families and brought up in different parts of the country, each ignorant of the other's existence; finally both reached Lincoln, and in time some chance occurrence disclosed the fact of their relationship. These girls, in spite of absolutely different environmental influences during their early years, are almost identical in temperament, mannerisms and mental development, both grad-

ing exactly 9 years in intelligence and answering test questions in an identical manner.

Confronted with the facts that there exists among us an appallingly great multitude of feeble-minded individuals, unprotected and unrestrained, and that feeble-mindedness is an hereditary condition, it becomes the plain duty of society to segregate these feeble-minded individuals, for their own protection, the protection of the community, and above all for the prevention of the increase of feeble-mindedness in the next generation.

The first problem which arises when the task of segregation is met is the separation of the feeble-minded from the masses at an age early enough to save them both from exploitation and from the commission of evil. It is in the solution of this problem that the psychologic clinic offers its services.

The first psychologic clinic to be established in this country is that of the University of Pennsylvania, founded by Professor Lightner Witmer. Such a clinic is a laboratory for the study of individual children. It is a place where difficult children of all types are brought by parents or other interested persons, for the purpose of learning why they are developing differently from the average child. The clinic aims to diagnose the case, give a prognosis and advise as to the future handling. In order to reach such a thorough understanding of the child as will make this possible, the clinic utilizes all sciences, all agencies that can in any way contribute toward the examination and explanation of the child. Thorough physical, pedagogic and psychologic examinations are made, and the child's daily life, its history and its heredity are investigated. The aim of all this complex examination is a purely psychologic one, the analysis of the mentality of the child and the discovery of the source of its peculiarities, but so intimately is the intellectual life of the child related to his physical condition and so intimately are both mental and physical conditions related to the environment, that adequate understanding of the psychologic factors can only be obtained in conjunction with a knowledge of the physical and social factors.

How far-reaching in its mental effect some seemingly slight physical defect may be would probably never have been so generally recognized had not emphasis been laid on it by the results of such well correlated physical and mental examinations. The case records on file at the clinic of the University of Pennsylvania show the intimate relation between physical defects and mental retardation as no amount of ordinary statistics can; case after case showing improved mentality after the correction of eye defects, defects of hearing and defective nutrition, or after the removal of adenoids, tonsils or impacted teeth.

When a child shows remediable physical defects the clinic arranges for the indicated treatment, and final mental diagnosis is suspended until the child is physically able to make use of his natural endowment of mentality.

The final examination reveals the child as feeble-minded, merely retarded or normal, and on this diagnostic basis advice is given as to the future handling of the child. The psychologic clinic is in short a clearing house for atypical children, from which after such children are thoroughly studied and placed in their best possible physical condition, they are sent out each to fill its proper niche in life, some to institutions for the feeble-minded, some to reform schools, some to special classes for backward children and some back to the environment of the normal child.

As an orthogenic agency the psychologic clinic has long been recognized. The attempt to develop the atypical child has proved futile unless such attempt is based on an adequate understanding of the mentality of the individual child, such an understanding as the mental analysis made at the psychologic clinic makes possible.

As a eugenic agency, however, the psychologic clinic is not yet recognized, although the urgent necessity for such assistance as it is equipped and ready to give is recognized by many. We have seen that the first step toward segregation of the feeble-minded demands that the defective child be separated from the normal group at an early age. With such a tool as the psychologic clinic at hand there need be no difficulty about identifying them. By the cooperation of psychologic clinics with public school systems, the feeble-minded could be separated from the rising generation before they reach the age when exploitation is possible. If in any community where education is compulsary all children who show retardation by the age of ten be submitted to a psychologic examination, the feeble-minded will be easily identified.

Moreover here in Illinois our charitable work is so well centralized that it is perfectly feasible, with but a slight change of procedure, to identify and properly care for many of the older floating feeble-minded population. We have two reform schools, an institution for the care of the feeble-minded, a school for the blind, a school for the

deaf and an orphan's home, all under the jurisdiction of one board. It has been my privilege to spend some time in each of these institutions for the purpose of studying conditions, and I found feeble-minded in each and all. Geneva has such a large quota that the efforts of education and reform in that institution are seriously handicapped. A very few of these girls are transferred to Lincoln, but the majority are sent back into the community at 21. The same condition exists, though not to so great an extent, at St. Charles and at Normal.

If the state of Illinois would establish a state psychologic clinic and send to it for examination each applicant for admission to any of its institution schools, each applicant could be placed at once in the institution best suited to minister to his individual needs. Feeble-minded boys and girls would not then be sent back into the community which entrusted them to the care of the state reform schools, to live again the lives which lead to reform school or to prison.

The three eugenic measures, the vital need for which this paper seeks to emphasize, are:

1. The establishment of a legal commitment of feeble-minded persons to institutions for the feeble-minded, such commitment authorizing the permanent detention of such persons.

2. The establishment of psychologic clinics in connection with public school systems, and the routine examination by such clinic of every child who shows pedagogical retardation by the age of 10 years.

3. The establishment of a state psychologic clinic in connection with the state institution schools, for the purpose of examining and properly placing the applicants for admission to any of these state schools.

HOW OLD THE NEW IN MEDICINE AND SURGERY *

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It used to be the custom, not so long ago, to think that our ancestors of the olden time had accomplished so little that really it was too bad that they did not live to see our glorious time. We prided ourselves so much on our progress that we were almost inclined to think that there must be something lacking in the folks who went before us for not having accomplished more. Their eyes must have been held, we felt, or their intelligences must have been darkened by something outside of themselves not to have seen more of the significance of things. As a consequence we were inclined to look around to all sorts of institutions, feudalism, scholasticism, religion, superstition as active in the suppression of human progress and the darkening of intelligence in the older time.

A change has come over our point of view in this matter in recent years. We have become more interested in painting, architecture, sculpture than in the past and the consequence has been that we have come to recognize that the older generations which we were inclined to despise had precious interests and made accomplishments that we are only just coming to emulate. When we were not interested in these artistic things ourselves we could not understand why they failed to be interested in the things that occupied us, but now we find that when we want to do something really worth while and that represents an enduring expression of beauty we must go back and imitate what they did and we are quite well satisfied to imitate with reasonable success.

It is rather amusing to hear people talk about progress in our time and about the wonderful advances that men have made and about evolution and to have the laureate's expression.

"We are the heirs of all the ages in the foremost files of time," quoted as if since we have the accumulations of the past and must have added something of our own, therefore, we must be far ahead of them. It takes only a little serious consideration to make us realize the utter futility of any such state of mind. Our painters are not capable of doing anything like as good work as those of a number of periods in the past. Our sculptors are quite willing to acknowledge their mediocrity. There is not a new idea in architecture in four hundred years. The nearest thing to a new idea in architecture is what the Spanish-American monks did for us on the Pacific Coast some two hundred years ago, but that is only a fine combination of older ideas. As for literature it would be a joke to talk about our generation as in any way progressive and least of all ahead of the past. Our poets and prose writers are quite willing to acknowledge their inferiority. Indeed our poets are such minor poets that the less said about them the better. Our dramatic literature is literally a farce. More plays were put on the stage — and made money—in the nineteenth century than in any other century of human existence, but there is probably not a single play written in the nineteenth century, that is expected to keep the

* Read before Chicago Medical Society, April 23, 1913.

boards because of its literary quality. We occasionally repeat one in order that an old actor may enjoy the opportunity to play youthful success or that a young actor may have the feeling of doing something his forbears did, but that is all. For plays that live we go back to the seventeenth and sixteenth centuries.

We have come to recognize now that we cherished some mistaken notions with regard to the accomplishments of the past mainly because our own interests were so narrow. We are still quite sure, however, that in certain departments, notably in science and above all in applications of science, we are doing some wonderful work that the world has never before even thought of and that this shows the marvelous progress of humanity. It might be well for us to realize the possibility at least of ignorance of the past, in this, just as in the previous state of mind being accountable for this also. Certainly anyone who thinks that the eyes of the past were held in the matter of science and its applications, or in what concerns observation and experiment, is quite mistaken. It is just a question of not knowing enough that permits anyone to hold such an opinion.

If we think for a moment that they did not know how to apply the great principles of science to what they wished to accomplish then we are forgetting the monuments of the past that we have before us. There are bridges still standing over streams that become swollen torrents at certain seasons of the year which were built over five hundred years ago. Our railroad stations are magnificient examples of the size of our constructions, yet it must not be forgotten that even the largest of them is practically not so large as St. Peter's at Rome. The choir of the cathedral at Beauvais is 210 feet from the floor to the ceiling, a wonderful piece of construction that rivals any of our architectural work even with the facile steel of the modern time. Their bells, their casting of bronze statues, especially equestrian statues, their knowledge of pigments for glass making and for painting, all show how much of applied science there was in the old time. It is sometimes asked a little impatiently "why did not the people of the middle-ages look around them in the great book of Nature instead of occupying themselves with their dry-as-dust old books?" Nature study is supposed by many apparently to be new in the world. It is not thought to be new, however, by anyone who knows the poets of the olden time. Dante knows his nature with marvelous detail. He knows about the ants and their ways, the metamorphoses of the insects, the habits of birds and beasts, and besides he has introduced descriptions of many scientific experiments into his great poem and he knew the science of his time better than any poet of our time knows our science. The amount of information that he has at command and uses, not to display his erudition, but to illuminate what he has to say about subjects that need such lighting from without, is simply marvelous.

When it comes to the question of the medical sciences our immediate forefathers were quite sure that here at least the past was quite neglectful, lacking in proper curiosity and depending on authority and not on observation. I sincerely wish that some of the people who talk of our time as one of observation and the old time as one of the following of authority would look around them now and ask themselves how many physicians in our time make any observations for themselves and what an immense proportion of them almost blindly follow the opinions of others. This has always been so. And it will always continue to be so. We cannot expect the immense majority of men to think for themselves. Indeed this very matter of depreciatory opinion with regard to the old times is due to a blind following of older authorities whose information was very incomplete and whose opinions were positive just in proportion to this lack of completeness of their information.

During the past twenty years we have had the advantage of the republication of a series of old text-books of medicine and surgery and the careful study of the work of some of the old medical schools and these have completely revolutionized our views with regard to medieval medicine and surgery. To take the single example of the school at Salerno, we have come to admire it as a fine development of medical education, making many acomplishments that ought to have endured, though surprisingly enough they did not. The most interesting feature of Salerno was its readiness to take teachers of all nationalities. We find men from Asia, from Africa, from Spain, as well as from various parts of Italy teach there. Students came from all over Europe. Patients also came from far and wide, attracted by the fame of the school. An English monarch and his son and various dukes in the north of France went down to Salerno to be treated. That journey was much farther than for us to go to Europe now.

The school deserved its wide reputation. When it began its work, Arabian medicine had introduced the system of treatment by prescriptions containing a large number of ingredients. Ori-

ental subtlety had somehow come to the conclusion that the more medicines you used the surer you were to benefit the patient. It was hoped that someone of the many ingredients would surely do good. Just how there was any assurance that the others would not do harm is not clear. We talk about gunshot prescriptions. In the older time they called them calendar prescriptions because there was as many ingredients in them as the list of days in the month, and the prescription looked like a sheet of a calendar or almanac.

Salerno modified all this and exalted particularly the natural modes of healing. Fewer medicines were used, and air, exercise and diet were made the basis of therapeutics. Salerno was particularly strong on diet, but hydrotherapy with hints now and then of various manipulative procedures reminding one of massage and some of our modern surgical system were in great vogue. While Salerno was doing this her rival at Montpellier was calling attention to the use of red light in small-pox and to the value of light generally as a curative agent as well as to the use of water internally and externally.

What Salerno is famous for particularly, however, is its surgery rather than its medicine. About the middle of the Thirteenth Century, the "Surgery of the Four Masters" was written, a text-book of surgery, not unlike the collaborations of the modern time. This text-book came to be used at Bologna and during the course of the next century its teachings bore fruit. A series of men, Theodoric, Hugo of Lucca, William of Salicet, Lanfranc, and then finally Guy de Chauliac, who had studied in Italy, wrote text-books of surgery which have been rendered easily available for study in recent years.

There is scarcely a phase of our modern progress in surgery that was not anticipated at this time. They operated on the skull for abscess and tumor of the brain; they operated on the thorax for pus and other fluids, and did all sorts of operations in the abdominal cavity. They were especially insistent on operations for the radical cure of hernia. The patient was placed in an exaggerated Trendelenberg position fastened to a slanting board with his head down so that the intestines might fall away from the site of operation, and various technical methods, such as the introduction of wire of various kinds, the application of sutures of all sorts of texture and various modes of sewing up the tissues were suggested as likely to prevent the recurrence of the hernia. They did not believe that every hernia should be operated on and they discussed this very wisely, but they did insist that operation in a good many cases would save great discomfort and avoid serious risk.

Of course, the thought that comes at once on hearing this is that it would be impossible to perform such extensive operations, requiring so much time, without an anesthetic. As a matter of fact, they had various forms of anesthesia and used a number of substances apparently with good success in producing insensibility to pain. The principal narcotics were wine, opium and mandragora in combinations, and they seem to have systematized the use of these rather well. A number of poets of the olden time talk of "the mercies of old surgeons," who put their patients to sleep before operating on them. Tom Middleton, our seventeenth century English poet, is an example, but somehow this development seems to have been missed to a great extent in the ordinary histories of medicine. We know now all about the use of these anesthetics and one of them was applied by inhalation, a tincture of opium and mandragora being allowed to dry on a sponge and this being placed in hot water and the patient allowed to breathe the steam from it.

Such extensive operations would surely be followed by very high mortality without antisepsis. While of course they did not understand the principles on which our modern antisepsis was established by Lister, they did have and used with excellent success one antiseptic at least. This was strong wine, which they poured over their wounds and applied on the dressings. This is an excellent antiseptic familiar even in scripture times, and it is not surprising that these old surgeons could boast of getting union by first intention, indeed it is to them that we owe the expression *per primam intentionem*, which derives any meaning that it has for us in the modern languages from its Latin significance. They even went farther, however, and insisted that surgeons whose wounds only healed after suppuration had made a mistake in their mode of operating, that is, of course, if they had operated through a previously unbroken skin surface.

There are various bits of technic employed by these old surgeons that are very interesting as anticipations of what we are likely to think of as modern inventions. In operating on wounds of the intestines they emphasized very strongly the fact that if the intestine was wounded and not sewn up the patient would surely die. They invented various needle holders and suggested technical aids to secure proper union. In large wounds of the large intestine particularly it was suggested by Hugo von Pfohlsprundt in the

fifteenth century that the intestine should be completely divided and then the ends brought together over a metal tube with flanges. In this way the intestinal ends were kept in contact until agglutination took place and leakage was prevented. Pfohlsprundt declared that many of his patients had lived for years after such operations and he seems to have been quite secure about the ultimate passage of the metal tube. This anticipation of the Murphy button is probably of special interest here in Chicago.

A predecessor of Pfohlsprundt's, however, made what seems to me at least, perhaps because of my lack of surgical experience, a better suggestion. He removed the trachea from animals and used this as the tube over which the intestines were fastened and declared that the cartilage was stiff enough to maintain the intestines in such a position as would prevent leakage until agglutination took place, but then it would be gradually disintegrated by the juices of the intestinal tract and thus disposed of. This disintegration, however, would be delayed for a sufficiently long time to secure the safety of the patient.

Such anticipations of our modern inventions seem almost impossible to us, but that is because of the foolish notions we have cherished as regards the lack of practicalness of these men of the olden time. Let us not forget, however, that the brothers of the physicians who were making these fine technical advances in medicine were building bridges, inventing locks for canals, erecting cathedrals and town halls, making the most wonderful stained glass in the world, doing wonderful work in all the arts and crafts that we are now learning to admire and beginning to imitate, and that, of course, it is not to be supposed that only the fools of the families studied medicine and that those who took up our glorious profession were incapable of accomplishing at least as good work in what may be called the craft side of medicine as their brothers were doing in other departments.

It is indeed hard to understand how we should have come to accept this foolish notion of the men before our time, in our own profession, proving deficient and lacking in anything like even common sense. Our self-complacency has simply carried us away and has been fostered by a number of side issues. For one thing a religious controversy has been allowed to creep into medicine. A case had to be made out against the old church after the so-called reformation and this was bolstered up by emphasizing in every possible way the presumed suppression of education and intellectual development. No more trace of any such suppression is to be found than occurs at the hands of any conservative body of men at the present time when there is a question of novelty, but the old church's influence was supposed to be eminently destructive of anything and everything that led to progress. There is literally no truth in this at all, but our medical history has been tinged with it until the republication of these old text-books shows us how utterly at fault were our previous notions.

Of course, the question of how these discoveries were made and then subsequently lost, is a mystery. This is, however, the constantly recurring mystery of history. We find no trace of anything like regular progress upward, but many evidences of discoveries being made and then lost. The Suez Canal was opened before our time and allowed to close. America was discovered several times—we have documents from the thirteenth century relating to missions on the Labrador coast, which might have meant anything as far south as Massachusetts, and abundant references to Greenland. Evidence in the old tombs in Egypt seems to show that steam carriages were used there a considerable time before Christ (see *Scribner's* for February, 1913) and there are any number of lost arts of which Wendell Phillips used to tell us so eloquently which will surely be found again and constitute further examples of these losses and recoveries.

The ligature has been invented and reinvented many times in the history of surgery. It is easy to understand why. When ligatures are made of new fresh material and are applied in new clean hospitals they work beautifully. Whenever septic conditions intervened, then they worked irretrievable damage. Secondary hemorrhage was so common from their use under septic conditions that no wonder surgeons looked around for other modes of stopping bleeding. When an artery the size of the radial would begin to bleed in secondary hemorrhage because of the coming away of a septic ligature the patient would be dead from the furious bleeding before anything could be done for him. After a few such experiences, that would be the end of the use of the ligature for several generations. When it was invented again, however, the discoverer knew nothing about its previous use. Hot knives, hot pincers, torsion, everything would be had recourse to in the meantime.

It is harder to understand the rise and fall of interest in the specialities in medicine. We are sometimes inclined to think of this as the first great era of specialism, but we do so only when we are ignorant of the past. In Egypt, between

600 and 1,000 years before Christ, some thirty-six specialties developed, and Herodotus tells us that there came to be many complaints that the field of treatment of each of these specialties was too narrow and the patient often as a consequence suffered. Apparently each specialist found the seat of the patient's ailment in his own department. We have gotten far beyond that in our development of specialties, but it is just as well for us to realize that this curious complaint of the specialist was heard nearly 3,000 years ago. Unfortunately our hints of medical history do not go back much more than 6,000 years, or we would surely have complaints in previous periods.

As I have said, specialties developed at many times in the history of medicine. The treatment of the eye for cataract was particularly developed at a number of periods. A generation that will perform cataract operation may confidently be expected to do almost anything on the eye and tear duct operations and other surgical intervention in the eye was not uncommon. The throat and nose specialty was rather well developed at several periods, and men insisted on the necessity for clear breathing space through the nose and on the removal of polyps and the straightening of the septum and other things of that kind.

Perhaps the greatest surprise is to be found in dentistry. This at least we are inclined to think of as new, but it is possible that there was an interesting development of dentistry in Egypt and we have specimens in museums in Italy from the old Etruscan tombs which show how far dentistry had gone in the sixth, seventh and even eighth centuries before Christ in central Italy. There is good bridge-work and the fastening in of loose teeth by gold bands and other phases of prosthetic dentistry. One of the laws of the Twelve Tables at Rome forbade the burying of gold with the corpse—they were protecting their gold reserve at Rome as we do now—unless it was fastened to the teeth. This law was made about 450 B. C., and shows how common must have been the use of gold for dental purposes in the mouth. We have specimens of crown work and many dental appliances. Martial laughs at the women who got so scared that their false teeth fell out and their false hair came down. I believe that it was he who originated the expression that he knew that a lady's teeth were her own because he knew that she had bought and paid for them.

During the middle ages dentistry developed again and Guy de Chauliac describes the filling of teeth, insisting that the cavity must be cleared out carefully and then washed out with wine before filling. Curiously enough, tin, which is coming into use somewhat again for tooth stopping and which has the distinct advantage it is said of helping in the preservation of teeth in which it is present as a filling, was considerably used in the middle ages. Gold was quite commonly employed at this time. A well-known papal physician, John de Vigo, declared, however, that gold should be used only when people wanted it, because it was too conspicuous. Arculanus, John of Arcoli, developed dentistry in a scientific way in the fourteenth century, and Guerini, in his "History of Dentistry," has given a long chapter to his work.

In a word the new is much older than we have any idea of, as a rule, in medicine and surgery, as well as in the arts, literature and the crafts. It was only what we would expect quite naturally if we once dropped the fond self-complacency that makes us think that the people of other times than our own must have been fools. Among ignorant people, there is a tendency for those in any country to think of the inhabitants of any other countries as foolish, and even well-informed people often have the most curious notions of those distant from them in space, though particularly, of course, distant from them in time.

Perhaps the best illustration of the anticipation of our modern progress in medicine and surgery and at the same time the explanation for that anticipation is to be found in the development of medical education toward the end of the middle ages. About the middle of the thirteenth century, according to a law of Frederick II, promulgated for the Two Sicilies, as the South of Italy and Sicily proper were called, a student of medicine must have spent his three years at the university before he could take up the study of medicine and then was required to spend four years at medicine before he was given his degree of doctor. This allowed him to teach in the subordinate position, but did not permit him to practice. Before the license to practice would be issued he must have spent a year with a physician. This is the standard of medical education that we are trying to climb back to. We want men to have made their undergraduate work in the university and then require four years at medicine and a year of hospital work. There are very few colleges as yet, however, that insist on such requirements. Two generations ago all our medical schools in this country required but two years of study. A man was allowed to study medicine if he could write his name, and he did not have to write it very plainly, either. His two years of medical study so-called consisted

of two terms of four months each of ungraded lectures as a rule; that is, the students heard the same lectures each year. How we ever got down so low as that is hard to comprehend. There were many reasons. The chief one was that men were engaged in making money out of medical education. Whenever any form of education pays there is likely to be something wrong about it. Let us not forget, however, that the men who came out of these medical schools were often capable of thinking for themselves, making observations for themselves, and sometimes doing better work in their early years of practice than the men who are now able to answer so many questions, but who never think for themselves.

There is just one reason for this talk to you. I have been writing books about "Old Time Makers of Medicine" and "Education, How Old the New" and "Modern Progress and History," until it has come very poignantly to me that whenever the men of any generation or any country despise the men of any other time or any other place they are belittling themselves. We have a glorious history in medicine, six thousand years of professional work with many generations of thoughtful observers. Medicine has gone up and down in its achievement, but there has never been a century when someone has not been doing serious thinking and writing on medicine well worth preservation and containing good lessons for the after time.

Unfortunately, we have taken our history of medicine from all sorts of out-of-the-way sources. The books that were written and printed in the largest editions and therefore most frequently preserved for the after time, were often those on popular medicine. Popular medicine is always absurd. Suppose we were to be judged by our popular medicine. Suppose that the advertisements in our medical journals, to say nothing of the lay press, were to be preserved for some future generation to judge our medicine by. Suppose for instance that the family medical books of the present day were to be taken as representatives of what we thought about medicine in our time. It makes one fairly shudder to think what succeeding generations would think of us. It would be quite bad enough to be judged by some of our supposedly scientific advances; the Brown-Séquard remedy for old age; opotherapeutics for the heart and the brain; some of the exaggerations of internal antisepsis; our abuse of the coal-tar products, and all the rest. We have judged the past unfortunately, largely by its popular books and by the foolish absurd notions in the therapeutics of our forefathers. Professor Richet once said that the therapeutics of any generation was always absurd to the second succeeding generation. Are we going to be the first generation to violate the law? Perhaps so. I do not know, but I have my doubts. I know a little of the absurdities that have passed under my own eyes in the past twenty years while as a medical editor I have been keeping track of a wide field of so-called medical literature.

We live in glass houses and we must not throw stones. Above all we are professional men with a magnificent professional history of six thousand years. Let us not smirch our own nests, but learn to appreciate some of the great workers of the past. There is much to be learned from them, particularly from their mistakes, very often even from their absurdities and if we will only remember that they were men like ourselves, struggling with the deeper, more complex even than in our time, insoluble problems of the therapeutics of humanity, with insufficient knowledge though with the best good will in the world as a rule, we shall have a much better idea of the true history of medicine than can possibly be obtained from the cheap calumny of the past, because at places we happen to know only the side of it that lends itself to ridicule.

I have to thank you for your kind attention to this rambling talk and hope that it may prove suggestive enough to make you go back and study in the volumes that are now so readily available some of the genuine history of our dear old profession of medicine.

THE ILLINOIS COUNTY TUBERCULOSIS ACT

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In the August issue of this JOURNAL, Dr. Sachs described the Glackin law for the establishment and maintenance by cities and villages of tuberculosis sanitaria. This article does not speak of what would seem to be a much more important act for the same purpose passed by the legislature of 1909 and now in force. This consists of a very brief amendment to the statutes governing county administration and enables counties to establish and maintain such sanitaria. It will be readily appreciated that unless farming communities can be benefited by tuberculosis sanitaria, the larger part of our population will be excluded from such benefits. It is true also that

our cities are in nearly all cases heavily incumbered by municipal debt. Therefore it is more likely that counties will avail themselves of the law to maintain antituberculosis sanitaria. They are in much larger proportion free from debt. The property available for taxation in counties is much greater, so that the burden of maintenance will be more widely distributed and consequently less than if such burden fall only on the property of cities.

It is found that up to date few cities have availed themselves of the benefit of this law. In the city of Peoria, where the referendum vote resulted in a large majority to erect a sanitarium, the city council found means to annul the desire of the people.

So far counties have not availed themselves of the benefits of this law. That such a law exists seems to be known by very few. All the members of our profession should be made familiar with its provisions, and a sentiment created in its favor. In McLean County the Board of Supervisors defeated the proposition in the face of a very strong pressure of a determined public sentiment. This defeat was due to the well-known fear of increased taxes, be the increase ever so small. It was noted at the time that supervisors from the cities of Bloomington and larger towns in the county voted for the sanitarium. Indeed, only five votes were required to secure it. It should be noted, however, that the sentiment in favor of these institutions is growing, and the time is coming when the need of them will be so apparent even to the average supervisor that he will give his vote.

It should be said in this connection that tuberculosis is just as prevalent in farming communities as it is in our cities, because the average farmer still persists in breathing canned air all the time he spends in bed and indoors.

The law to which reference is made will be found in Chapter 34 of the Statutes of 1909, under the head of "Counties," Section 24, Paragraph 5 and Section 25, Paragraph 9. It will also be found in the session laws for the year 1909, page 163. It reads as follows: "To cause to be erected, or otherwise provided and maintained, all suitable buildings for a sanitarium for the care and treatment of all persons suffering from tuberculosis who may be admitted to said sanitarium by, or under the direction of, said board, and to provide for the maintenance and management of the same." This provides for the admission of all, both rich and poor.

In view of the fact that so much publicity has been given to the Glackin law and so little publicity to this apparently insignificant amendment to an existing law, it would seem to be well to place this matter also before the medical profession of our state in order that all may know about it.

The application of this law is very simple. The power is vested in the board of supervisors to purchase ground and to erect and maintain buildings without necessity for a special commission. All that is required is the intelligent cooperation of the community and the medical profession. If anything remains to be desired in connection with this law it should be an amendment, making it possible for two or more counties to unite in the maintenance of one sanitarium.

It must be quite evident to all intelligent thinkers on this subject that the city or the county as a unit for the establishment of these sanitaria is preferable to the state unit.

Thus it is true as Dr. Sachs says, "That the cities (and counties) of Illinois are in a position to comprehensively deal with their tuberculosis problems." It is up to the people led by the medical profession to act on the situation.

FRACTURES ABOUT THE ELBOW-JOINT *

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As fractures about the elbow-joint are the most common of all fractures in childhood, as the prognosis of such fractures, in most textbooks, is very bad, and as the elbow-joint is such a very important part of the arm, it will be readily seen that the subject assigned to me to-night is the most important of any dealing with fractures of the human skeleton.

Anatomy of the Lower End of Humerus.—The shaft of the humerus is a cylinder, flattened anteroposteriorly as it nears the elbow-joint, the articular end of the bone being another cylinder attached transversely to the front of the lower end of the humeral shaft. This anterior attachment of the articular end accounts for our being able to flex the forearm to such an acute angle while being able to extend it to only a little greater than a straight angle. The internal condyle is lower than the outer, thus in supination giving us an abduction of the forearm of about 5 degrees from the straight line. This, together

* Read at the Meeting of the Englewood Branch of the Chicago Medical Society, June 3, 1913.

with an abduction of an equal amount in the forearm itself, gives us the carrying angle, which is about 10 degrees. The end of the humerus is composed of the internal condyle and epitrochlea, the external condyle and epicondyle, the olecranon and coronoid fossae, the capitellum or radial articular surface and the trochlea or ulnar articular surface. The trochlea is concave from side to side and convex anteroposteriorly, giving a saddle joint, while the capitellum is spherical, giving a very shallow ball and socket joint.

Ligaments.—A capsular ligament surrounds the entire joint, reinforced at either side and in front by very heavy dense bands. The bands on the inner side (the internal lateral ligaments) arise from the epitrochlea, the posterior one passing back to the olecranon process, while the anterior one attaches to the coronoid process. The bands on the outer side (the external lateral ligaments) arise from the epicondyle and attach to the orbicular ligament of the head of the radius, anteriorly and posteriorly. The anterior band or ligament passes from the epitrochlea across the front of the joint to insert into the orbicular ligament of the head of the radius.

Limitations of Motion.—Flexion is limited by the interfering soft parts, tension on the posterior bands of the lateral ligaments and the coronoid process impinging against the humerus. Extension is limited by tension on the anterior capsule, the anterior bands of the lateral ligaments, tension on the overlying muscles, especially the brachialis anticus and biceps and the impinging of the olecranon process into its fossa. If motion is carried beyond the normal, either rupture of the ligaments with dislocation (in adults) or fracture (in children) occurs.

Development of the Bones About the Elbow.—At birth there is no bone in the ends of the humerus, ulna or radius. The first center of ossification to occur is in the capitellum, and is usually present at 6 months of age, always at 1 year. The center for the head of the radius appears at about 6 years, the epitrochlea at 6, the trochlea and olecranon at about 11 years, while the epicondyle center does not appear until about the twelfth year. These different centers of the humerus unite into one solid mass at about the fifteenth year, except the epitrochlea, which is delayed to the eighteenth or twentieth year.

Classification: Fractures of the Lower End of the Humerus.—The number of different kinds of fractures that may take place, due to the different combinations that may be formed, are almost numberless. The usual classification given in the order of greatest frequency of occurrence is as follows:

1. Supracondylar (including diacondylar); 2, external condyle; 3, epitrochlear; 4, epiphyseal separation; 5, internal condyle; 6, intercondylar T or Y; 7, trochlear; 8, epicondyle; 9, capitellar. (Illustrated with bones, x-ray pictures, etc.)

Fig. 1.—Side view of most frequent type of supracondylar fracture.

1. A supracondylar fracture (Fig. 1) passes across just above the epicondyle and epitrochlea and is outside the joint. Do not confuse this with a fracture of the lower end of the shaft of the humerus.

Fig. 2.—Diacondylar fracture.

2. A diacondylar fracture (Fig. 2) passes across just above the epiphyseal line, but within the joint. It crosses the olecranon and coronoid fossae. If the lower fragment is displaced forward with a backward dislocation of the ulna and radius, it is known as a Posadas fracture.

3. In a fracture of the external condyle (Fig. 3) the line passes from above the epicondyle and enters the joint near the center of the trochlear surface.

4. An epitrochlear fracture is a separation of the epitrochlea at the epiphyseal line. It is probably common, but often unrecognized. It is outside of the joint.

5. A separation of the lower epiphysis. This may occur at any age up to the time of union to the shaft. It does not show in an x-ray picture unless there is some displacement.

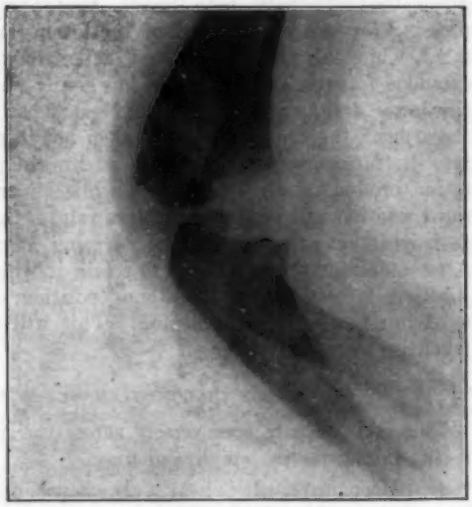

Fig. 3.—Fracture of external condyle.

6. A fracture of the internal condyle separates the entire inner part of the articular surface, the line of fracture entering the joint near its center and running almost straight up and down.

7. Intercondylar T or Y fractures (Fig. 4) are rare. They occur more frequently in adults than in children, and are like supracondylar fractures with the lower fragment split in two.

8. Fracture of the trochlea: this is an isolated detachment of the trochlea and is very rare.

9. Fracture of the epicondyle: usually occurs in the young and is an epiphyseal separation. Very rare.

10. Fracture of the capitellum: an isolated fracture of the capitellar surface and is also very rare.

11. When there is excessive violence any combination of the above fractures may occur with dislocations, compounding, etc.

Mechanism of Fractures at the Elbow. — A fall on the outstretched hand transmits the force through the carpal bones to the radius, which in turn connects directly with the capitellum. The only force reaching the internal condyle being through the interosseous ligament between the radius and ulna (the fibers of this ligament run obliquely down from the radius to the ulna), hence the greater frequency of fractures of the external over the internal condyle. If to the above force you have hyperextension of the arm, exerting tension on the anterior part of the lateral ligaments and the anterior ligament, you get a supracondylar fracture; hence the greater preponderance of these two types of fracture.

Fig. 4.—Intercondylar ("T" or "Y") fracture.

A fall on the flexor surface of the forearm will also produce a supracondylar fracture. Due to the carrying angle, falls occur more often on the inner side of the forearm, putting greater tension on the internal lateral ligaments; hence the greater number of epitrochlear fractures over that of the epicondyle. In a fall on the extensor surface of the flexed forearm the force is applied almost entirely to the ulna and results in a fracture of the ulna with a forward dislocation of the head of the radius or a fracture of the internal condyle. If the arm is adducted so that the force is applied with an equal degree to both ulna and radius, a diacondylar fracture or an epiphyseal separation occurs.

A fall on the posterior surface of the acutely flexed elbow results in a fracture of either con-

dyle (as the arm is adducted or abducted), or if struck squarely a supracondylar fracture or a fracture of the lower end of the shaft of the humerus. Many fractures are the result of direct violence, the elbow being crushed between the falling body and the object struck (usually the floor or ground). This may produce any of the above-mentioned fractures, or as more frequently happens a comminuted fracture, which feels on palpation like the proverbial "bag of beans." From the above you will see the importance of getting, whenever possible, an accurate history as to just how the fall occurred to aid you in the diagnosis.

Taking up these fractures one at a time, we will start with the most common one, or

SUPRACONDYLAR

This fracture usually occurs in children under 16 years of age (adults get a dislocation unless the force is one of direct violence).

(*a*) Mechanism: It is produced by falls on the outstretched hand with hyperextension, by falling on the anterior surface of the forearm, for the same reasons (i. e., tension on the anterior lateral ligaments), or by striking the elbow directly with the forearm acutely flexed.

(*b*) Pathology: The line of fracture usually runs from behind downward and forward, with a backward and upward displacement of the lower fragment due to (1) the force producing the fracture; (2) the action of the triceps muscle pulling it up and back; and (3) the biceps and brachialis anticus muscles pulling the forearm upward. The line of fracture may run from behind upward and forward, when the lower fragment will be displaced forward and upward. The lower fragment is flexed on the forearm, due to the forearm muscles that attach to the epicondyle and epitrochlea. The periosteum is not often torn through in the back, but it is stripped from the upper fragment sometimes 3 or 4 inches. If reduction does not take place early, this subperiosteal space becomes filled with blood, organizes and later prevents reduction.

(*c*) Symptoms: Besides the symptoms common to all fractures, pain tenderness, swelling and disability of motion, there are:

1. Deformity resembling a posterior dislocation but higher up, and the condyles are dislocated backward with the forearm—the swelling may be too great to determine the latter. You may be able to feel the lower end of the upper fragment in the anterior fold of the elbow.

2. Crepitus: This can always be felt unless there is impaction. Elicit crepitus by a back-and-forth motion, by flexion and extension or by a rotary motion of the forearm. Do not manipulate more than is necessary to elicit this crepitus once, because of the danger of increasing the injury to the soft parts.

3. False point of motion: By grasping the arm with one hand and the extended forearm with the other, adduction and abduction may be readily produced.

(*d*) Treatment: The treatment is accurate reduction of the displaced fragments with retention. If there is impaction it will first be necessary to hyperextend the arm, often requiring considerable force, but never more than just enough to loosen the fragments because of the danger of forcing the lower end of the upper fragment through the blood-vessels and soft tissues in front. After the lower fragment is so loosened grasp the arm with both hands, the thumbs pressing forward on the back of the lower fragment, while the assistant makes traction on the extended forearm and gradually, but gently force the lower fragment into place. Next flex the forearm on the arm, care being taken not to rotate the forearm on its long axis, an inward rotation producing a cubitus varus, while an outward rotation will produce a cubitus valgus, thus destroying or exaggerating the carrying angle. After reduction the problem is to retain it, which I believe is best done by the Jones' position, or, as Ashurst calls it, hyperflexion. This will be taken up more fully later on.

TRANSVERSE DIACONDYLAR

This is a fracture transversely across the humerus just above the epiphyseal line.

(*a*) Mechanism. It is nearly always produced by a fall on the extensor surface of the flexed forearm, the force being applied equally to the radius and ulna.

(*b*) Pathology. This fracture is within the joint, occasionally extending extracapsular at the inner or outer side. There is rarely any backward displacement, but nearly always a lateral one, either outward or inward, usually the latter, due to the force producing the fracture.

(*c*) Symptoms. The symptoms are similar to those of a supracondylar fracture. There is less swelling, usually no backward displacement, and crepitus is harder to detect.

(*d*) Treatment. This is the same as for a supracondylar fracture. As this fracture passes through the olecranon and coronoid fossae, you may get limitation of motion, due to new bone in the fossae.

EXTERNAL CONDYLE

A fracture with the line running from above the epicondyle downward and inward to about the middle of the joint.

(*a*) Mechanism. Due first to a fall on the outstretched hand without great hyperextension, so that the force is transmitted through the radius direct to the capitellum, with little or no tension on the anterior bands of the lateral ligaments; or second, it may be produced by direct violence, as falling and striking on the outer condyle with the forearm flexed.

(*b*) Pathology. This fracture enters the joint, the fragment including the capitellum, and usually the outer lip of the trochlea. In older children the line will pass higher up on the shaft. The fragment remains united to the head of the radius, and is usually rotated inward by the supinator muscles arising from the epicondyle.

(*c*) Symptoms. The swelling is localized to the outer side of the joint, lateral measurement showing a widening. You can usually grasp the fragment and move it on the shaft of the humerus, thus eliciting crepitus. The hand is pronated, the origin of the supinator muscles being torn off and the carrying angle is lessened or gone, due to a falling down of the fragment producing adduction of the forearm.

(*d*) Treatment. Unless the fragment has been completely rotated by the supinator muscles, it is easily reduced, first, by supinating and abducting the forearm to restore the carrying angle, then acutely flexing the forearm. These two motions are usually sufficient to force the fragment into place and hold it there. This position should be maintained for five or six weeks, very little or no passive motion instituted, and a long time given to recovery, six to twelve months. If the fragment is so rotated that it cannot be replaced or if no union occurs, as often happens, an operation should be performed and the fragment nailed into place.

EPITROCHLEA

This is a very common fracture (20 per cent. of all elbow fractures), and is an epiphyseal separation.

(*a*) Mechanism. It is caused first by direct violence as a fall on the inner side of the forearm, pulling it off by ligamentous tension, or second, by direct violence as striking on the acutely flexed elbow.

(*b*) Pathology. As aforesaid, it is an epiphyseal separation, often mistaken for a sprain, and entirely outside of the joint. The fragment is displaced downward and forward.

(*c*) Symptoms. Characterized by local tenderness and swelling with a false point of motion and sometimes crepitus. There is usually pain on supination and full extension of the forearm.

(*d*) Treatment. Immobilization in flexion is all that is necessary. The result should be perfect.

EPIPHYSEAL SEPARATION

This lesion may occur at any age up to the time of union of the epiphysis to the shaft of the humerus, at about 15 years of age.

(*a*) Mechanism. Same as for diacondylar fracture.

(*b*) Pathology. The fragment is intra-articular; displacement is little or none, with little or no tearing of the capsule.

(*c*) Symptoms. They very much resemble a sprain with swelling, tenderness, sometimes a soft crepitus and with extreme pain on forced extension due to the pinching of the fragment. The x-ray is of no help unless there is displacement of the whole forearm.

(*d*) Treatment. Immobilization with splint or hyperflexion; the latter preferred, due to the greater comfort of the patient. The results are good if the condition is recognized and treated. There is seldom any interference with growth of the humerus from injury to the epiphyseal line.

INTERNAL CONDYLE

A rare fracture in childhood.

(*a*) Mechanism. It is caused (1) by a fall on the flexed forearm in such a position that the force is applied to the ulna alone; or (2) by direct violence, as a fall on the inner condyle with the arm acutely flexed; or (3) crushed between the falling body and the ground.

(*b*) Pathology. A fracture extending almost straight up and down from above the epitrochlea into the joint. It is one of the worst fractures of the elbow-joint, as the ulnar articulation is the principal part of this joint. The further the line of fracture extends toward the capitellum, the worse it becomes, as it leaves only the ball and socket joint of the radius for support, the forearm swinging freely in all directions. It is most often the result of direct violence, and injury to the ulnar nerve is very common and should be looked for before any attempt at reduction, to prevent being accused of having caused it during manipulation.

(*c*) Symptoms. Adduction of the forearm with loss of the carrying angle, the weight of the forearm forcing the fragment upward. Localized swelling, tenderness, crepitus, a movable inner condyle on the shaft of the humerus and a widening of the joint.

(*d*) Treatment. Here again hyperflexion gives the best result. Treated in the extended position the forearm tends to sag thus forcing the fragment upward while a right-angled splint allows the ulna to rise up to the level of the radius with the same disastrous results. After a careful replacement of the fragments fix the arm in hyperflexion. With any method cubitus varus is apt to occur. Personally, I believe there is a field here for the open operation and nailing the fragment to the shaft, unless for other reasons operation is contra-indicated.

INTERCONDYLAR T, Y OR V FRACTURE

(*a*) Mechanism. These fractures are usually due to direct violence. They are rare in children due to the elasticity of cartilage and the epiphyseal line offering less resistance. Gurlt holds that a supracondylar fracture is first produced, then the lower end of the shaft is driven into the fragment splitting it in two.

(*b*) Pathology. The line of fracture may be T-, Y- or V-shaped, or, in fact, almost any shape with very irregular fragments and splinters. There is much tearing of the soft parts; the ulnar, median or radial nerves may suffer and should be looked for on the first examination, and the blood-vessels may be torn across. These fractures are often compounded.

(*c*) Symptoms. There is an enormous amount of swelling and ecchymosis, pain and tenderness, a marked widening of the joint due to the shaft of the humerus usually lying between the lower fragments. There is crepitus and a flail-like motion of the forearm. An accurate diagnosis can only be made from an x-ray picture.

(*d*) Treatment. Operative treatment is here indicated more than in any other elbow fracture. An incision over the inner and outer sides of the arm allows you to inspect the ulnar and radial nerves, and at the same time fasten the fragments to the shaft with pegs, besides suturing the periosteum and surrounding soft tissues with chromicized catgut or tendon. Hyperflexion is here contra-indicated, except in a few very square T fractures. Of splints, a right-angled inner splint well padded, with a weight at the elbow, is probably the best. The results are apt to be very bad; a certain amount of deformity with excessive callus and loss of motion is to be expected.

EPICONDYLE: A RARE FRACTURE

(*a*) Mechanism. It is due to direct violence.

(*b*) Pathology. It is outside of the joint, the fragment usually displaced forward, but sometimes backward.

(*c*) Symptoms. Local swelling, pain, and tenderness with pronation of the forearm. You may or may not get crepitus.

(*d*) Treatment. By pressing the fragment into place and immobilizing the joint.

FRACTURES OF THE TROCHLEAR AND CAPITELLAR ARTICULAR SURFACES

These are rare occurrences, and like loosened cartilages in the knee joint, seldom unite. They usually cause enough interference with the joint motion to necessitate removal, the ultimate result being good. This completes the fractures of the lower end of the humerus.

Fig. 5.—Fracture of olecranon.

OLECRANON FRACTURES (FIG. 5)

(*a*) Mechanism. They are usually caused by direct violence, but occasionally by muscle pull.

(*b*) Pathology. The line of fracture is usually at the narrowest part of the olecranon. If a subperiosteal fracture, there may be no displacement. A fracture with no displacement at first may become displaced later, due to a pulling on the upper fragment by the triceps muscle. There is usually no splintering. The upper fragment, when pulled up, is usually rotated outward.

(*c*) Symptoms. Pain, swelling and tenderness localized over the olecranon process with inability to extend the arm. If seen before much swelling takes place the fragments may be easily felt.

(*d*) Treatment. In young, healthy individuals, where there is separation of a finger's breadth or more, operative treatment with suturing or wiring should be the regular procedure providing this can be done within the first twenty-four hours. Late operations, i. e., several weeks after injury, are devoid of good results due to a shortening of the triceps. Where the separation is slight, in elderly people, or where for any reason there is contra-indication to operation, a long anterior splint with adhesive strips placed to hold the upper fragment down is the regular mode of procedure. After three weeks, if some union has taken place, an inner angular splint may be substituted, the straps still being maintained and the angle gradually lessened until at five weeks the arm may be brought nearly to a right angle, never beyond that. No active motion should be allowed for two months.

OLECRANON EPIPHYSEAL SEPARATION

This usually occurs under 15 years of age. The mechanism, pathology and symptomatology are about the same as in fracture, but less severe. The insertion of the triceps is not materially interfered with. The treatment is immobilization in a straight or slightly flexed position for a few weeks. Functional results are good, but the fragment often remains ununited.

RADIUS

Fractures near the elbow. They are divided into three groups.

1. Fractures of the neck within or below the annular ligament.

2. Fractures just below the head, but within the annular ligament. The head is usually split and there may be impaction.

3. Splitting of the head.

The first group is common with fracture of the ulna, the second group is the most frequent and equally common in adults and children, while the third group is especially apt to accompany backward dislocation of the elbow joint. The only positive symptoms are tenderness over the head of the radius and spasm of the muscles on rotation of the forearm, which does not occur in fractures of the humerus. There may be crepitus, widening of the head of the radius and, if a loose fragment, interference with flexion and extension.

Treatment. This varies with the type of fracture. If below the annular ligament restore the fragments and put the arm in hyperflexion. If across the neck or within the annular ligament the fragments are impacted or loose in the joint. If impacted, put up in a right-angled splint for three or four weeks. If the fragments are loose in the joint, operation with removal of fragments or excision of the head of the radius as seems best.

Complications that may arise with fractures about the elbow-joint:

1. Volkmann's ischemic contracture. This is an atrophy and shortening of the flexor muscles of the forearm and is usually due to too tight and prolonged bandaging.

2. Injury to nerves, especially the ulnar, but the median and radial may suffer. These nerves may be pinched, pierced by splinters of bone or torn in two. They should be looked for in every elbow fracture on the first examination.

3. Injury to blood-vessels. The median artery or vein may be torn across, in which case they must be cut down on and ligated at once.

4. Ununited fragments. This occurs most often in fractures of the external condyle. The treatment is to cut down and nail the loose piece to the shaft.

Treatment by the Jones' Position or Hyperflexion.—Aside from operative treatment which has been mentioned in connection with the various fractures, the use of a right-angled splint with a weight in certain intercondylar fractures and a straight splint in olecranon fractures, I believe the best method of treating all other fractures of the elbow to be Jones' position, or, as Ashurst calls it, hyperflexion. After having reduced the fracture and adjusted the fragments in the best possible position, the arm extended and under traction, flex the forearm as tightly as possible without shutting off the radial pulse. In flexing the forearm, keep up as much traction as possible, being careful not to rotate the forearm on its long axis or to let the fragments slip. Be sure the forearm is parallel with the shaft of the humerus. In this position the forearm acts as an anterior splint, while the tense triceps tendon acts as a posterior splint holding the fragments in place as though grasped in the palm of a hand. After the arm has been flexed, carefully sponge it with alcohol and place some talcum powder and a piece of gauze in the fold of the elbow. Do not forget to feel for the radial pulse. There are two methods of maintaining this position of hyperflexion: First, and the

oldest being a band of adhesive plaster passing about the wrist and upper arm to maintain flexion while a figure of eight swath bandage supports the whole arm. The objections to this method are the discomfort of the adhesive plaster on the skin and the danger of its upper edge cutting into the skin on the back of the arm. The second method is with the roller bandage, and so far as I know should be credited to Dr. Ashurst. With a roller bandage take several turns about the wrist, then a few turns about the hand to prevent swelling, return to the wrist, then pass the bandage around the arm as high up as possible, continuing these turns until the elbow is reached and covered in, then passing back to the wrist pass a few turns about the wrist and neck thus suspending the arm from the wrist. Do not fasten the arm to the chest and have the patient report any swelling of the fingers at once.

On the third or fourth day remove the bandage, maintaining the hyperflexion, sponge the elbow flexure and axilla with alcohol, dry and dust with powder, then reapply the bandage. After two weeks the hyperflexion may be gradually lessened until at the end of four weeks the arm may be carried in a large triangular sling, and at five weeks all dressings removed and movements encouraged. *Do not use forced passive motion.* Some will secure perfect motion in six weeks, while others will require, epecially if there has been much contraction of the biceps, a year.

END RESULTS

Cotton says: "The supposed end results are often judged as they appear at the time the dressings are removed, at a time when they show up very badly and do not represent end results at all." The most serious end result is ankylosis, then in lessening degree the different grades of restriction of motion up to a mere loss of power of full extension and full flexion, which really does not hinder the functional use of the joint. Deformity as such is seldom disabling, although in marked degrees of gun-stock deformity the arm is usually weakened. A perfect result is one in which flexion is equal to the uninjured arm, extension of at least 180 degrees and a normal carrying angle.

The end results as reported by most authors show from 20 to 28 per cent. of perfect arms, the remainder showing some loss of flexion or extension or both, an increase or decrease of the carrying angle or a complete ankylosis. In a series of fifty-six cases treated by Ashurst in which he used the hyperflexion method, the end results show a perfect arm in 81 per cent., with bad results in only 19 per cent. of his cases. Personally, I have treated nine cases of elbow fractures by hyperflexion, four diacondylar, two external condyles, one T or Y fracture, one epiphyseal separation and one epicondyle. All of these nine cases had a perfect functional result. One diacondylar did not regain full extension, while the two external condylar cases showed non-essential deformity in the way of bony nodules at the outer condyle.

SUMMARY

In summing up I would say:

1. Make an accurate diagnosis before attempting reduction; if it cannot be done without, get an x-ray picture.

2. Reduce the fracture as soon as possible; it prevents swelling of the soft parts and tends toward early bony union with a lessened amount of excessive callus. If swelling has already taken place so that a diagnosis is difficult or impossible without, get an x-ray picture and reduce at once.

3. Always give a general anesthetic, unless there is some definite contra-indication for it.

4. Get the fragments into the best possible position, then secure the arm by whatever method best holds them there.

5. Always take an x-ray picture after reduction, to be sure of results.

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EXPERIMENTAL STUDY OF INTESTINAL SUTURES *

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CHICAGO

While assistant in the service of Dr. Richter at Wesley Hospital, our attention was directed in several instances to the varying degree of reaction in the employment of different intestinal sutures. Further investigation revealed the fact that in the hands of different operators a great variety of suture material was employed. One belief, however, seemed to be prevalent as borne out by clinical work, and that was that in order to ensure safety of results a fairly heavy suture was necessary, and as we were employing sutures of much finer texture with apparently good results, I undertook some experimental work

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along these lines at the suggestion of Dr. Richter, with a view to studying the varying degrees of reaction and strength in the more commonly used materials. The conclusions which I have to put before you then have been drawn from experimental work on thirty dogs with a study of the gross and microscopic findings, also ten dogs used for strength tests; and supplementing this, observations clinically of several cases in the human to which I will later call your attention.

Let us first consider a series of experiments dealing with the amount of reaction and effects of various intestinal sutures. In all of these experiments a longitudinal incision of about two inches in length was made in the small gut and this was repaired with the customary two layers of sutures. The operating was done in all instances under thoroughly surgical conditions and the same technic followed throughout. Nine varieties of suture materials were used as follows: Human hair; horse hair; linen, plain and paraffin; silk, Nos. 7 and 13; catgut, Nos. 00, 1 and 2. In this way we have been able to study not alone the effects of the commonly selected sutures, but also to study the results of the use of extremely fine and heavy materials. In ten dogs the abdomen was opened, observations made and the specimens removed at the end of twenty-four hours; in another ten at the end of forty-eight hours; and in the third ten at the end of ninety-six hours. Each dog was subjected to at least one kind of material, and in some instances two different kinds were used in the same animal. None of the animals died, and in none was there any marked degree of peritoneal infection.

As a matter of convenience, let us divide the work into three groups, viz., Experiments 1, 2 and 3; Experiment No. 1 dealing with the ten dogs in which the specimens were removed at the end of twenty-four hours; Experiment No. 2 with the ten dogs in which the specimens were removed at the end of forty-eight hours, and Experiment No. 3 with the ten dogs in which the specimens were removed at the end of ninety-six hours. In this way parallel studies can readily be made of the various sutures at stated intervals.

EXPERIMENT NO. 1

No. 1. The dog in which human hair was used presents on opening the abdomen the following: The peritoneal cavity is dry to a normal extent; the bowel at the side of the operation is entirely free from adhesions; in the immediate vicinity of the suture the line to the bowel is of a somewhat darker congested color. The line of suturing is intact and the lumen is patent.

No. 2. The dog in which 00 catgut was used presents the same picture, except that there was slightly more reaction at the point of suturing.

No. 3. This is also true of the animal in which horse hair was used.

No. 4. Catgut No. 0 presents clinically the same picture as No. 00 and horse hair.

No. 5. In the dog in which a fine black silk No. 7 was used there is the same gross picture.

No. 6. Here silk, No. 13, was employed, and in this dog we are confronted with some striking differences in the pathologic picture. The gut at the side of the incision is protected by a loop of omentum slightly adherent over the line of suture. The bowel is very dark and injected at this point, and noticeably more moist than in any of the preceding dogs. The lumen is patent, though not so large.

No. 7. Intestinal linen used for suturing, and the picture corresponds clinically with that of the preceding animal.

No. 8. Paraffin linen employed, and the reaction corresponds to that of No. 7.

No. 9. Here catgut No. 1 was used. The amount of reaction was grossly as in dogs Nos. 6, 7 and 8, the amount of inversion of the serous coats being still more pronounced.

No. 10. Here catgut No. 2 was used and a mass of omentum is adherent over the entire area of operation. The loop of gut at the point of repair is very noticeably constricted, though still patent. Its color is a dark red, and there is a most pronounced congestion; also a distinct seepage or leakage is evidenced at the various points of suture.

At this point we were impressed with two striking features in the results of the different sutures: First, that the degree of reaction, as evidenced by the adherence of omentum, the tendency to seepage and the congestion of the repair bowel was uniformly greater in the heavier than in the finer materials used as sutures; second, that hand in hand with the caliber of the sutures the constriction of the loop became greater. This, of course, is readily accounted for by the fact that with a heavy material a larger bite is necessary in order to approximate the two edges without their cutting through.

As to the varying amount of reaction. Since this uniformly increases with the size of the suture, and since it is in reality an effort on the part of nature to repair injury, one can only conclude that the larger the suture the greater the amount of damage inflicted. As confirmatory evidence, the microscopic picture was carefully studied; the section of gut extending several inches beyond the field of operation in each direction was removed, and, after cleansing with water, was filled with 50 per cent. alcohol, tied, and then immersed in the same for twenty-four hours; hence it was transferred to 70 per cent., 95 per cent. and absolute for the same period. Transverse paraffin sections were then cut and

stained with hematoxylin and eosin. A study of these clearly bears out the gross fact that the heavier the suture used, the greater is the amount of reaction, for in the section in which No. 2 catgut is used there is infinitely more cellular infiltration and a much greater inflation of serosa than in the human hair specimen.

EXPERIMENT NO. 2

Here sutures were allowed to remain for forty-eight hours, and the findings coincide with those of Experiment No. 1. Briefly, our experimental notes are as follows:

Dog No. 1, human hair: Abdominal cavity dry; line of approximation perfect; no adhesions.

Dog. No. 2, 00 catgut: Abdominal cavity here also dry; no adhesions; approximation perfect.

Dog. No. 3, horse hair: Gross picture the same as in the preceding.

Dog No. 4: No adhesions; abdominal cavity dry; line of suture intact.

Dog No. 5: Gross picture corresponds to No. 4.

Dog No. 6, silk No. 7: Loop of omentum slightly adherent over line of suture; bowel dark red and moist.

Dog No. 7: Intestinal linen; omentum adherent; bowel moist and dark red.

Dog No. 8, paraffin linen: Same as No. 7.

Dog No. 9, catgut No. 1: Bowel very congested; omentum adherent, and there is a distinct seepage; constriction is also more pronounced.

Dog. No. 10, catgut No. 2: There is a noticeable peritoneal exudate; the adherence of omentum is greater; the constriction is very marked, and the bowel congested; the lumen, however, is patent.

In this group there is one point on which I wish to lay particular stress, and that is, that in Dogs Nos. 6, 7, 8, 9 and 10, in which the suturing material was uniformly heavy, the amount of seepage is distinctly greater than in Dogs Nos. 1, 2, 3, 4 and 5, where a fine suturing material was employed. Microscopically, the sections are in all important characteristics similar to those of Group 1.

EXPERIMENT NO. 3

In the third group of dogs we allowed the specimens to remain for ninety-six hours, in order that a more definite study as to the lasting effects of the various sutures might be made. The experimental notes read as follows:

Dog No. 1, human hair: Abdominal cavity dry; line of approximation perfect; no adhesions.

Dog No. 2, 00 catgut: Abdominal cavity here also dry; no adhesions; approximation perfect.

Dog No. 3, horse hair: Gross picture the same as in the preceding.

Dog No. 4: No adhesions; abdominal cavity dry; line of suture intact.

Dog No. 5: Gross picture corresponds to No. 4.

Dog No. 6, silk No. 7: Loop of omentum slightly adherent over the line of suture; bowel dark red and moist.

Dog No. 7, intestinal linen: omentum adherent; bowel moist and dark red.

Dog No. 8, paraffin linen: Same as No. 7.

Dog No. 9, catgut No. 1: Bowel very congested; omentum adherent, and there is a distinct seepage; constriction is also more pronounced.

Dog No. 10, catgut No. 2: There is a noticeable peritoneal exudate; the adherence of omentum is greater; the constriction is very marked, and the bowel congested; the lumen, however, is patent.

Here again one is impressed with the varying degree of reaction excited by the different materials. For example, whereas the bowel in Dog No. 1 is still entirely free, and the constriction occasioned by the suture very slight, and whereas the color of the bowel is practically normal, and there is no seepage; in Dog No. 10, on the other hand, there is a very firmly adherent mass of omentum over the repair loop; there is pronounced constriction and seepage to the extent of there being a noticeable exudate; also, the bowel is still quite congested. Although these two instances represent extremes, correspondingly the degree of reaction is seen to be progressive throughout. The microscopic findings were similar to those in the first two groups.

So much for the study of the varying degrees of reaction; now as to the strength of these different sutures as employed in the gastro-intestinal tract, with which Group No. 4 has to deal.

In this experiment ten dogs were used. They were subjected to identically the same procedure as were those in the experiments just discussed, except that in all these animals I have used at least two materials at different points, and in some as many as four. After the bowel had been sutured, the abdominal cavity was closed and the intestinal tract inflated under pressure by means of an ordinary blood-pressure apparatus with the manometer attached. In this way the amount of pressure could be easily and accurately recorded.

Each of the first eight dogs was treated in this manner, while in Nos. 9 and 10 a deviation was made, in that the sutured bowel was held immersed in water and the pressure then applied.

The results of these tests are to me, personally, quite remarkable, and are, I am sure, at great variance with popular conceptions. Our notes read as follows:

Dog No. 1, bowel sutured at two different points with human hair, returned to the abdomen and inflated. At a pressure of 294 mm. of mercury—almost as much as the manometer registers—the distal line of sutures

broke. Close examination revealed the fact that the strands of hair had actually given way, although none had cut out of the bowel wall.

Dog No. 2, fine black silk and 00 catgut at a pressure of 210 mm.; the line of catgut suturing burst, examination showing the catgut to have broken at the knot and also to have torn through the bowel at one point.

Dog No. 3: Horse hair tore through the bowel at 215 mm.

Dog No. 4, catgut No. 2 and intestinal linen: At a pressure of 164 mm. the catgut gave way; examination showed sutures to be intact, but torn through the bowel.

Dog No. 5, catgut No. 0 and paraffin linen: The bowel burst at the linen suture at 200 mm.; suture intact.

Dog No. 6, catgut No. 1: Tore through at 192 mm.

Dog No. 7, coarse silk: Tore through at 198 mm.

Dog No. 8, catgut No. 0: Suture broke at 215 mm. at point of knot.

Dogs Nos. 9 and 10: Pressure made with the sutured loop held in water; human hair broke at 187; No. 1 catgut tore through bowel at 101.

Before going further, let me emphasize two points: 1. That the pressure of 294 mm. withstood by the human hair is the equivalent of approximately 13 feet of water pressure; and 2, that the true strength of the heavy catgut was never determined, the gut being torn through before this point was reached, and that this point was more than 100 mm. below the point withstood by the human hair.

Now as to the interpretation of our results: First, concerning the amount of reaction, there is no question but that the ideal result is that in which there might be a perfect coaptation without reaction, and this we most nearly have approached using human hair as a suture. Since the amount of reaction is closely related to the amount of seepage and leakage, both of which are greater with the heavier sutures, we must conclude that the finer the suture the better the result.

From the results obtained in Group 4, there can be no doubt as to which suture is the strongest under the conditions existing, and the reason that human hair withstands such a tremendous pressure, whereas the heavy catgut invariably cuts through the bowel, can only lie in the fact that in the elastic, strong, submucous coat of the bowel, on which the strain falls, there is a minimum of damage, while the use of a heavy suture cuts the fibers here so as to rob the gut of its natural strength.

The idea of the fine suture really had its origin in the first gastro-enterostomy for pyloric stenosis in infancy, performed by Dr. Richter, I believe, some five years ago. In that case a coarse suture was used, and as the baby developed an intestinal obstruction several months afterward, opportunity was afforded for a study of the results. The entire upper abdomen was filled by most extensive adhesions. In the nineteen similar cases which have been operated on since that time a fine silk suture has been used with good results, and no difficulty of technic. This led to the use of the same material in adults, and in one case a gunshot wound with five perforations, where the patient died from a postoperative pulmonary edema, we were able to study the results post mortem. On the fourth day the union in each instance was perfect; there were no adhesions, and no gross evidences of reaction.

These results are in perfect accord with the experimental work and lead to the following conclusions:

1. Safety of result lies not in the inherent strength of the suture, but rather in the perfection of approximation and minimum of reaction.

2. The ideal result is that in which a minimum of reaction is attained.

3. From a clinical standpoint the suture of choice is that which is of a fine texture, readily prepared and the finest that can be conveniently employed by an individual operator.

In looking over the literature, I have not been able to find any work bearing directly on this subject.

F. G. Cornell, in an article entitled, "Capillary Intestinal Sutures," was able to prove that in the heavier silk and linen sutures capillarity or seepage was greater than in the finer; also that a lax suture had more capillarity than a taut, and a wet more than a dry. The catgut sutures showed very little capillary action.

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DISCUSSION

Dr. William R. Cubbins of Chicago: *Mr. Chairman:* This paper is extremely interesting to me, because I had believed that it made very little difference as to the suture material, and I have been very much instructed.

In suturing a great many intestines in dogs, and in the operative surgery which I have had a chance to do, it has occurred to me that it has been necessary to take a very much larger bite with the needle with a large thread than it is with a small thread. That seems queer, but the comparison is made instantaneously and is made subconsciously. With a large suture you unquestionably and undoubtedly will take a larger bite than with a small suture.

I wish to compliment Dr. Courtenay on this work, and assure him that I shall certainly use it in my future operative surgery.

Dr. H. M. Richter, of Chicago: A marked traumatic inflammatory reaction, with extensive adhesions

to neighboring bowel and omentum, are unnecessary accompaniments of intestinal suturing. They are particularly likely to occur when coarse suture material is used, with the accompanying seepage and traumatism to the tissues sutured. The use of fine suture material, such as that mentioned, has for some years seemed to me a logical step in the development of the technic which Dr. Courtenay described, and one that I carried out clinically, as he stated. Surely both the clinical work and the very positive results of the experimental work of Dr. Courtenay speak for the feasibility of carrying out the technic. It is true that such extremely fine suture material will not stand rough handling; but one should not be careless or rough in surgery.

Dr. Courtenay (closing the discussion): I want to thank Dr. Cubbins and Dr. Richter. I want to bring out one point in the clinical application of this work. Recently I had occasion in Dr. Schroeder's clinic to do a gastroenterostomy on a young woman, and in this case I used the finest silk and only put in one layer of sutures, with no reenforcing suture, as even Dr. Richter has been in the habit of doing. I knew from my experimental work that one need not worry in the least about complications from this point. This particular patient, two or three days after the operation, developed a pneumonia. After her pneumonia she developed a pericarditis. She developed also a most severe sepsis. Beginning on the afternoon of the operation, I fed that patient liquids as she wanted them. As soon as her pneumonia developed, she commenced to rapidly run down, and it became necessary to nourish her. We fed her copiously, with no bad results..

I want to emphasize the point that there is no need whatsoever to worry as to the safety of the fine suture material.

HEMORRHAGE IN THE NEW-BORN *

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That this subject is creating a vast amount of interest in the medical world is manifested by the large amount of literature written and the number of case reports in the last three years. From Abt's paper in 1903 and P. E. Weil's in 1905, until Welch's in 1910, the subject lay dormant while work was being done to solve the difficult problems which were confronted by the men interested in this work. Welch's paper opened the gateway to the solution of the problem of treatment and thereon interest was greatly renewed, especially in this country. This interest has had the good effect of popularizing the new ideas and should be kept up, as it will be the means of saving hundreds of new-born infants who heretofore were doomed. Abt classifies this topic into two parts: traumatic and accidental hemorrhage and spontaneous. The first are due to injuries received in childbirth, such as application of forceps, causing intracranial bleeding. Spencer believes this to be quite a common cause; rupture of vessels in breech extractions wherever great force is put on the parts or injury to mouth in bringing aftercoming head. Circumcision has often uncovered a hemophiliac baby, or where infection takes place persistent bleeding will occur. I have heard of cases of tonguetie, division of which caused bleeding of a severe type and one where death followed. The spontaneous cases are without a history of any injury and we have the bleeding from almost every part of the body—head, mouth, gums, bowel, navel, under the skin, vagina, conjunctiva, etc. The bleeding can be very severe and steady or intermittent, with a large or small amount lost or a slow constant oozing. In many cases it was a constant light or moderately heavy hemorrhage, and I am inclined to think that this is the rule from my own observations and that of many other men. Very seldom, if ever, is there any immense quantity of blood loss at the beginning of an attack. It is hard to define hemorrhage in any instance, particularly when combined with shock, and that element present itself in some of these cases. Some babies can lose considerable blood and not show much ill effect, while in others a little oozing seems to make them very ill; and again in these cases the external bleeding may and is at times only a very small part of the real hemorrhage that is going on where it cannot be observed, as in the lungs or liver. The following cases have been outlined mainly with regard to etiology and treatment, and where the author fully believes that the treatment instituted was really needed, and where it was used as a cure and not as a prophylactic measure.

CASE 1.—Baby G., circumcised on eighth day, usual operation with careful hemostasis. Baby apparently healthy. Parents both healthy. Next day after operation baby commenced bleeding, not very much, but enough to saturate dressings and come through diaper; more sutures inserted and local applications, but bleeding continued. Third day child was given three doses of human serum, 25 c.c., 15 c.c. and 25 c.c., at five-hour intervals. The father was the donor of blood. Blood was taken from maternal grandfather, and on fourth day was given 40 c.c. in two doses. Salt solution was given per rectum and local treatment continued. Personally donated blood and on sixth day child was given two doses of serum of 10 and 15 c.c.,

* Read at the Sixty-Third Annual Meeting of the Illinois State Medical Society, at Peoria, May 22, 1913.

one dose at 8 a. m. and one at 12 m. No bleeding after 4:30 p. m. that day, and child is well at this time. During the hemorrhage child gained 10 ounces in weight, but was dangerously ill, very pale and anemic. This case would have resulted seriously without the use of serum, as the coagulability of blood was below normal, taking from thirty to forty minutes to clot. The etiology of this case is in doubt. There was no apparent infection at the site of operation.

CASE 2. Baby P. Ritualistic circumcision on eighth day, at 10 a. m. No suturing. Child bled profusely. Child arrived at hospital at 7 p. m. He was very pale and looked quite ill and was still bleeding considerably. An injection of whole blood was given at once and more blood obtained from which to get serum. Slight bleeding continued, and at 6 a. m. child was given 20 c.c. of serum, which was repeated at 12 m., and at 3 p. m. Child improved somewhat, but bled a little during the day and night. On the third day he was given three doses of serum, 70 c.c. in all, Dr. Smith of Wesley Hospital being the donor. No bleeding after first injection. Child lost 14 ounces in weight, but left in good condition and is living and well, 13 months old. History shows that the mother's father died of hemorrhage following a crushing injury of finger. One uncle died of bleeding from the nose and mouth at the age of 21. One cousin of this baby was very near death from bleeding after extraction of tooth. The blood findings in this case were apparently normal, but from the history a tentative diagnosis of hemophilia is made.

CASE 3. Baby R. The labor in this case was somewhat protracted and difficult, and baby was delivered with forceps after a thirty-six-hour labor. Baby weighed 7 pounds 14 ounces and was apparently healthy; no injury to be seen. Baby nursed and was well until the morning of the fourth day, when it had a temperature of 101.6, and seemed quite ill and did not nurse very much. About 10 a. m. had a large, very offensive dark stool, followed by another at 11:30 containing dark and light blood. The bowels moved every hour or more, and each stool was bloody. Temperature rose to 103.2 by 8 p. m. and child was very ill. Was given 30 c.c. of whole human blood and 2 c.c. of horse serum; 1 a. m., 20 c.c. human serum; 4 a. m., 20 c.c. human serum; 7 a. m., 20 c.c. human serum; 10 a. m., 35 c.c. human serum; 1 p. m., 30 c.c. human serum. The diapers were changed very often and each contained blood in varying amounts. Slight bleeding occurred from the nose and the mouth, and two hemorrhagic spots the size of a quarter of a dollar were seen on the lower part of the abdomen. Child died at 3 p. m., about thirty-four hours after becoming ill. No syphilitic history. Mother had normal puerperium. Diagnosis, melena neonatorum. No post mortem. The clinical picture was one of infection of the gastro-intestinal tract; 156 c.c. of serum were given, but had no effect that was appreciable. The child lost 9 ounces in weight in thirty-four hours.

CASE 4. Baby K. Normal delivery. Healthy appearing child. On the third day diaper had a large stain of blood in the morning; bleeding was from vagina; child not very well. Temperature 100.6. It looked worse than the bleeding indicated. Every diaper was stained quite red for a diameter of 4 inches or more. Child nursed well. Blood was taken from father and was allowed to stand in case serum was needed. Bleeding continued all night and as the child showed the effects of the hemorrhage it was given 25 c.c. of human serum at 9 a. m., twenty-four hours after initial hemorrhage; three hours later 15 c.c. were given, and by 2 p. m. all bleeding had ceased and did not reappear. Child now 21 months old.

CASE 5. Baby C. Same as Case 4, excepting that the human serum was given in 15, 10 and 5 c.c. doses three hours apart, beginning thirty hours after bleeding started. The father gave the blood. The mother of this child has had a severe postpartum hemorrhage after both of her deliveries, requiring tamponnade of the uterus.

CASE 6. Baby B. This baby was born after three hours' normal labor. Parents both healthy. Mother had an uneventful pregnancy and puerperium. This baby was bleeding from the nose and mouth when born, and hemorrhage continued freely; twenty-five minutes after birth was given 25 c.c. of whole human blood and 5 c.c. of horse serum. Child died thirty-three minutes after birth. No post-mortem. Nostrils, mouth and throat bloody, but no erosions. Cause of hemorrhage unknown. Mother had another baby thirteen months later, which was a healthy, vigorous boy, who was circumcised on eighth day and showed no tendency to bleed. He is well and thriving.

CASE 7. Baby L. This child became quiet about eighty hours after birth and developed rather a severe case of melena neonatorum. In the first twenty-four hours had six bloody stools of moderate amount; two hours following second bloody stool was given 30 c.c. of human blood, and in four hours 20 c.c. of human serum. This was kept up and in forty-eight hours the child received 250 c.c. of human serum with very marked improvement; still the stools had a little blood in them. In the second forty-eight hours child received 120 c.c. of human serum and received 80 c.c. after blood had disappeared from stools and temperature reduced to normal. The highest temperature was 103.6, the lowest 100.8. The child nursed well after the first ten injections of serum. The father and two uncles were the donors of blood and were very willing givers. About 280 c.c. of serum were used in ninety-six hours. This child left the hospital well and is thriving, 8 months old.

CASE 9. Baby M. This baby was delivered after a very hard labor and a difficult forceps extraction, due to an occipitoposterior presentation. Child cried almost incessantly from birth, and on the third day presented severe nervous symptoms, and by the fifth day showed all the symptoms of cerebral hemorrhage. Lumbar puncture showed almost pure blood. The baby was given an injection of 15 c.c. of whole human blood, followed by 20 c.c. of serum in four hours. Sixth day was given 35 c.c. of serum in three doses. Child died early on the morning of seventh day. Other remedies were used, such as bromids, injection of normal saline solution and ice cap to head. The hemorrhage in this case was undoubtedly due to injury during birth.

CASE 10. Baby B. Normal delivery. Child normal. Credé was done to the eyes, and in twelve hours there was a severe conjunctivitis, but not much swelling of the eyelids. The secretion was blood-stained very markedly and resisted all remedies for two days. Microscope showed no infection. The child was given on the fourth day 15 c.c. of human serum at 9 a. m., and although the oozing stopped by 11:30, an additional 15 c.c. were given. No more bleeding. The

eyes healed up nicely, and there has been no recurrence of the trouble.

CASE 11. Baby P. Normal delivery and apparently normal child. On fourth day became ill; had four very offensive stools, the last three containing some blood. Blood was taken from father and the next day, after the first bloody stool, was given 30 c.c. of human serum, three hours later 20 c.c. was given, and child became much better. Had one slightly stained bloody stool that day, and one tarry stool the next morning. As we had 15 c.c. of serum left, we injected this so as to clinch matters, if possible. Child left hospital and was well until 13 months old, when through an error in diet it developed atypical Finkelstein's disease, the child having from fifteen to twenty bloody stools a day for eight days, when it died. In addition to other treatment it was given 320 c.c. of human serum, the largest dose being 40 c.c., the smallest 10 c.c.

CASE 12. Hematoma of moderate size with some bleeding from navel. This was controlled by two injections of human serum three hours apart.

CASE 13. Very large hematoma, with two hemorrhagic spots, one on lower abdomen and one on leg. Child was given three doses of serum, three hours apart, 70 c.c. being injected, the first dose being 30 c.c., then 25 c.c. and 15 c.c. This controlled the condition at once.

Etiology.—This remains to date an unsettled problem, although a few new thories have been added to the long list of old ones given out by the earlier writers on this subject. That hemophilia plays only a minor part in these hemorrhages is being borne out by the case reports of the last few years. Larrabee was able to collect 37 cases, and some of these doubtful from the history. Grandidier, in 228 cases of spontaneous hemorrhage from the navel after birth, found only 60 per cent. due to hemophilia. Ritualistic circumcision has often led to early recognition of the hemophilia and has been followed by severe bleeding and even death. This happened in Case 2, reported by the writer. Von Lumbeck reports a case which bled off and on for sixteen years, stopped, and showed no further tendency to bleed. According to Von Etlinger, childhood is the most dangerous period, and the old theory that children rarely die during the first year cannot be any longer held. A great many babies have died from hemorrhages in the past, and there are still a good number of fatal results from the first hemorrhage, or rather hemorrhages. It is a very rare condition that a child should die from the initial bleeding, but they do die from the first series of hemorrhages or from a continuous loss of blood. That this condition is due to infection seems the most plausible and has the largest number of followers. Gärtner, Newman and Babes have shown the septic nature of the bleeding in many cases. There are, of course, many cases in which it is difficult to see where infection could be the cause of the hemorrhage, as in those cases of intrauterine bleeding and those children that are born with an active hemorrhage going on, as in Case 6, reported in this paper. In cases of genital hemorrhage in girl babies this may only be a part of the bleeding that is going on. Rieter reports 7 cases of genital hemorrhage, 4 of which had bleeding in other organs; other cases of the same are of frequent occurrence. In operations, such as circumcision and tongue-tie, where there is no history of hemophilia, a local infection no doubt takes place which interferes with the normal action of the blood-vessels, causing a continual oozing. These cases often come in groups in large hospitals and may be of an infectious nature (Green and Swift). Welch believes that it is due to a toxin which reduces the normal equilibrium of the endothelium, or any other condition which will do the same. The clinical picture of melena neonatorum is one of infection, and is in reality the only one of the many types that clearly stands out with the typical picture of infection. Schoss and Commiskey believe the initial hemorrhage is due to some vascular lesion, and that the persistent oozing is due to a defect in the normal mechanism for control of bleeding. Marazek believes syphilis to be the factor in some cases. Quoting from Green and Swift, we have it that the first-born is more subject than others; second, number of deliveries or social standing no factor in etiology; third, the length of labor and forceps make no difference. The first two statements are accepted, but as to the third, it is clinically true that the cases of cerebral hemorrhage, hematoma of the scalp and sternocleidomastoid muscle must have the initial vascular lesion from the injury to the parts affected as a result of a long labor with or without a difficult forceps delivery.

Meyers believes that chloroform anesthesia predisposes to bleeding and reports nine cases. We believe that this is merely a coincidence and would have been the same had ether or any other anesthesia been used, and one might give ether as a etiologic factor where it was used during the delivery of a baby who afterward bled. Goodell lays a great deal of stress on the nursing of babies early in severe cases of toxemia of pregnancy after delivery. Nothing has been definitely learned regarding the blood itself as a factor in these hemorrhages: the coagulability has no bearing on the bleeding. In some cases the blood platelets have been greatly reduced in number and some stress has been laid on this point. The cases present themselves under so many different circumstances, the bleeding occurring in every

part of the body, that one might give an etiologic theory in each case. When one studies a series of cases, such as are reported in this paper, the etiology of the condition presents a difficult puzzle and a multitude of problematic causes. Clinically, these are cases of hemorrhages with the symptoms that go with such a condition, and the symptoms correspond to the amount of blood loss. As stated before, in many cases the visible bleeding is only a small part of actual hemorrhage that is going on, and the baby's condition shows it as such. We know the child is loosing more and is more ill than is possible from the amount of visible blood. In melena neonatorum the babies become ill on the third or fourth day. There is an elevation of temperature; the child does not nurse well; the stools are tarry and very offensive, become more frequent as the time passes, and at times almost pure blood comes from the bowels. There may be bleeding in other parts, such as from the navel, from the mouth, under the skin, etc. The child loses rapidly in weight, refuses nourishment and is very ill. There is a papillary rash on the body in most cases. In all of the different varieties of hemorrhage the initial bleeding is never so severe and of such large amount as to endanger the life of the child, which is very fortunate from the standpoint of treatment and gives a fairly good opportunity to institute means of checking the bleeding without subjecting the baby to severe operative procedures, which would be necessary in case this initial bleeding was so profuse as to require the immediate replacing of a large amount of fluids.

The prognosis in these cases is infinitely better than it was eight or nine years ago, or even four years back; as will be shown in our discussions of the treatment.

Treatment.—We may date the modern treatment of this condition from 1905, when Weil recommended the use and injection of human or beef serum into the veins or under the skin in cases of hemophilia. In 1908, Lambert reports the case of melena neonatorum cured by transfusion of human blood. Many cases are now reported by various authors of remarkable cures by the use of blood or blood-serum, both animal and human. Bigelow reports three cases cured by injecting rabbit serum. Nicholson a case of melena neonatorum cured by the use of human serum. Mosenthal, Meyers, Swain, Jackson, Murphy, Vincent, Richards, Goodman and many others, report good success with the modern treatment of these hemorrhages in the new-born.

In 1910, Welch reported thirteen cases with one death, and used normal serum. It was this paper and his results that gave the great impetus to the use of human serum in these cases, and his later results have more than borne out the statements made in this paper in 1910. The treatment is divided as follows: 1. The injection of animal serums, such as horse and rabbit or beef. 2. Transfusion of human blood. 3. Injection subcutaneously of whole human blood either into a vein or under the skin. 4. Injection of human serum subcutaneously.

1. The injection of animal serum has caused bad symptoms in a great many cases and the results with its use have only been fair. It has been proven by Welch and others that in using animal serum the bad symptoms do not come from the antitoxin as in diphtheria, but from the serum itself; therefore, one must be cautious in the amount of serum used, else the child will develop serum sickness, which has caused fatal results, and the first doses sensitize the child against further injections.

2. Transfusion of human blood has been attended with many good results in these cases and is an excellent procedure, especially in cases where it is necessary to replace a large amount of blood rapidly, and it does check the bleeding in some cases permanently, but not in all, and must be used more than once. Transfusion is quite difficult, and to be used properly must be in the hands of an expert, and more so where one deals with new-born babies. Transfusion carries with it the dangers of thrombosis and embolism and infection. Fortunately in these cases, in the great majority of these instances it is a question of checking hemorrhages rather than the replacing of a large amount of blood, and a method which is simple and can be used as often as is required until the bleeding ceases is preferable to such a difficult and rather uncertain procedure as transfusion.

3. The injection of whole blood seems a very rational procedure and more so if the coagulability of the blood could be shown to be a factor in these hemorrhages. This procedure is also difficult owing to the coagulating rapidity of the blood after it is withdrawn and must be accomplished in a very short space of time. To those who have attempted injecting whole human blood either into a vein or subcutaneously, it is apparent how rapidly it must be done and how little success attends one's efforts, and the small amount of blood actually injected into the tissues. In a given case of hemorrhage one may commence the treatment by injecting as much whole blood

as they can or rather a good dose if possible, and while waiting for its effects, having more blood in preparation for the serum, and the treatment can be continued with the human serum. The whole blood is rapidly absorbed and has a decidedly good effect in some cases. The subcutaneous injection of whole blood is harmless and can be given in large quantities.

4. The results obtained by Welch and others, who have reported cases in the literature or personal reports to the writer, and the author's results in the reported cases in this paper, give the use of human serum the precedence over all other methods now in use. It is very effective and rapid in its action in controlling the bleeding, and has in many instances checked the hemorrhage when other methods have failed. The apparatus required for its use are in the equipment of every medical man, and the technic of the operation or rather of injecting the serum is exceedingly simple and can be carried out without failure in every instance. It can be used in the home just as safely and effectively as in the best regulated hospitals. Up to the present writing the author has been unable to find one case of sickness resulting from the use of human serum. At present it is impossible to say what a dose should be, but as the human serum evidently is harmless, no matter how much is given, it seems better to give what appears to a big dose rather than one that may be too small. It can be repeated every three or four hours, and that until the hemorrhage ceases. Welch gives the the following cases:

First baby 98 c.c. in one day in two doses, 20 c.c. and 78 c.c., and a total of 896 c.c. in twenty-one days.

Second, first day, 54 c.c., 39 c.c., 12 c.c., 10 c.c., four doses, 112 c.c. in one day.

Third, seven days, 630 c.c.

Fourth, five days, 1034 c.c.

The writer has given, as reports show, in one case 320 c.c. and another 280 c.c., the largest single doses being 40 c.c., and the largest daily 70 c.c. The serum itself never gave the slightest evidence of causing any untoward disturbance, and, as stated before, there is apparently no limit to the doses. The question may be asked as to when one should begin the injections of serum in a given case. This is difficult to answer, but in view of the fact that the external evidence of bleeding may be only a small part of the real hemorrhage that is going on, and also that the human serum does not produce any untoward symptoms, one is justified in using human serum very early in these cases as a prophylactic measure, as much as for the use of controlling the bleeding. The writer has given human serum in several instances where there was just a slight hemorrhage from the navel, mouth or genitals. These cases are not reported, as the use of the serum was used in a prophylactic measure, and in all of these instances blood was secured and put away for the collecting of serum, should more be required, and this is considered one of the strong points in the successful use of serum, that of having at least three or four good size doses ready for use when needed. I have only in one instance had parents refuse to give blood and then gave it myself and had the reward of seeing the baby live and thrive. In three of the writer's cases human serum was used, either donated by the writer or by one of the internes at Wesley Hospital. In these cases the serum from the father or near relatives of the baby did not check the hemorrhage for reasons unknown, while two, or the most, three injections of foreign human serum checked the bleeding. The first case received 15 c.c. and 10 c.c., and hemorrhage ceased; the second, 70 c.c. in three doses; the third, 60 c.c. in three doses. I would strongly advise in those cases where considerable serum has been used from the mother, father, or near relatives without the desired result, that human serum be given, if possible from one who is not related in any way to the child and who is of a different nationality. The good result obtained by the use of human serum has so far not been explained. William H. Howell says that the good results from serum in melena neonatorum cannot be explained from our present knowledge of the processes of coagulation, and the same holds good for the other forms of spontaneous hemorrhages. Whether the serum acts on the blood-vessels themselves cannot be proven.

Comparing the old line of treatment with the present day use of blood-serum, either animal or human, we have the following statistics to show the great advance made in the treatment of these spontaneous hemorrhages. At the New York Lying-In Hospital, out of 18 cases, 17 died where only therapeutic means were employed. Green and Swift report 51 cases, with 25 deaths; 25 had animal serum, 12 of these died. Abt had fourteen cases, 10 died and 4 lived where only drugs were used. In 1911, the same author reports 7 cases, 6 lived and one died where whole human blood or serum was used. The one death was excusable, as the child was moribund when brought to the hospital. Welch reports 31 cases with one death where human serum was used. Schloss reports 14 cases with 4 deaths with the

use of whole human blood. The writer has 12 cases with 3 deaths. Many others have reported remarkable cures with the use of human serum, and many babies are saved that no doubt would have died under the use of drugs, etc.

The writer's technic for securing blood and keeping it has been as follows: A large vein is secured in the arm near the elbow, and a good sized needle inserted and blood allowed to flow into large test tubes sufficient in size to hold 50 c.c. of human blood, and with a wide mouth so that the serum can be easily withdrawn from the tube with a syringe that will hold 15 to 20 c.c. of serum. One test tube has been, as a rule, a sufficient dose for one injection and need not be used again. This protects the blood against infection that might occur where a large bottle was used and the cork removed several times. Where whole blood is used, it is withdrawn with a syringe and quickly injected into the patient. The injections were made subcutaneously into the back just below the scapula.

CONCLUSIONS

1. The etiology is still a doubtful quantity.

2. The use of blood-serum is a great and decided advancement over the use of drugs.

3. Human serum is to be preferred to animal serum, as it does not produce any undesirable symptoms, can be used as often as is necessary and does not sensitize the patient against the administration of more serum.

4. Injection of serum is better than transfusion, as transfusion is a very difficult procedure, and one transfusion is never sure of stopping the bleeding.

DISCUSSION

Dr. V. D. Lespinasse, Chicago: This is a very interesting paper to me. The first experience that I had in treating these babies was in 1910. I became interested in it from the standpoint of direct transfusion of live unclotted blood. I have had ten cases so far, with two deaths. Both of the babies that died were syphilitic. They were of all grades of severity, from medium to extremely severe. The worst case I had was one in the service of Dr. Joseph B. DeLee, in which the child, two days old, passed blood from the rectum at 7 o'clock and at 9 o'clock it was practically dead. The pulse was very fast and the child in coma. We transfused as soon as we could, and while working at transfusion the intern reported that the pulse had disappeared, and soon afterward he could not hear the heart beat. In fifteen seconds after we started blood into the jugular vein the heart beat returned, and that baby is all right to-day, and is now 9 months old.

In regard to the relative value of serum and transfusion, the serum will stop hemorrhage in practically all cases, but there are types of cases, particularly from the intestines, that are diagnosed relatively late. Hemorrhage takes place in the stomach or bowel; it is not passed or vomited, and the first thing you know the baby is in collapse. These cases should be transfused immediately.

I have been called three times now to see cases of gastro-intestinal hemorrhages and to do transfusion, but the baby had been treated with serum, and died before I arrived. These cases have been given serum and in waiting for the serum to act they have died. In cases of the purpuric type, which are diagnosed as soon as the bleeding commences, there is a great field for human serum. But when the bleeding is from the bowel or mouth one is uncertain how much blood has bled into the lumen of the bowel or stomach, and a transfusion should be done as soon as possible.

Several years ago Dr. Graham did work in asphyxiated guinea-pigs, and when the little pigs were born they all had hemorrhages. I should think oxygen might be of value in these cases.

There is one case reported that, if transfused, I think would have lived. I think it is the first case that Dr. Goldstine reports. Transfusion is never too late. It can be done up to the time of or immediately preceding death.

Transfusion will do all that any other method of treatment will do. It will even save cases that are practically dead. Why not use it early and often?

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AFTER MISSOURI'S EXAMPLE—A HINT TO THE AUTO FOLKS

(Courtesy of Mr. Bradley and the Chicago Daily News.)

IF YOU AUTOISTS WANT GOOD ROADS—GO TO IT

ILLINOIS MEDICAL JOURNAL

Published monthly by The Illinois State Medical Society, under the direction of the Publication Committee of the Council.

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SEPTEMBER, 1913

Editorials

GOVERNOR DUNNE INDORSES GOOD ROADS

In his inaugural address to the 48th general assembly Governor Dunne dwelt at considerable length on the question of the improvement of the highways of the state. He recommended the passage of laws which would promote the efficiency and economy of the administration of the road system of the state. The general assembly has wisely enacted his recommendations into law. In conformity to this end the Governor has appointed three gentlemen as members of the state highway commission, under whose control will lie the enforcement of the Goods Roads Bill.

At the present time, the world over, the subject of good roads is a live and important topic. No member of the community, whether urban, suburban or rural, should have more interest in good roads and a keener desire for the betterment of our highways than the physician.

Good roads extend his practice, widen his sphere of usefulness and increase both the comfort and safety of his daily journeying. Good roads, too, increase the safety of his patients, for in many an emergency the speed with which a call can be answered will determine the question of life or death.

After appointing the good roads commission the Governor, according to published reports, called the members of the commission to his chambers and instructed them as follows: "You gentlemen are entrusted with one of the most important problems with which this administration has to deal. The good roads problem touches vitally our agricultural, commercial, educational, social, religious and economic welfare, and as well involves the conservation of natural resources.

"Sentiment throughout Illinois is and has been strong for better roads, reasoning as they should, that better roads mean that the farmer can get his produce to the market more quickly; it means better schools; larger neighborhood communities, better social conditions of all kinds. It means that Chicago is closer to Springfield and Springfield closer to Cairo. It directly connects the different communities of the state with each other. Legislation adopted by the 48th general assembly makes possible the perfection of our roadways.

"In the improvement of public highways, Illinois has been very negligent. The latest Federal report shows that in Illinois about 10 per cent. of the 95,000 miles of roads are improved in a permanent manner, as against 38 per cent. in Indiana, 20 per cent. in Wisconsin, 20 per cent. in Kentucky, 28 per cent. in Ohio and 50 per cent. in Massachusetts. Considered from the standpoint of improved roads, Illinois is the twenty-fourth in the list of states.

"Because of inaccessible primary markets, and the abnormal expense of transportation due to bad roads, the loss to farmers must be considered as a contributing cause of the high cost of living. In some Illinois counties, highways are impassable to ordinary loads for a full third part of the year. Bad roads not only hinder crop production and marketing, but they keep the rural consumer away from the store of the merchant for weeks at a time. They keep pupils from the schools, and voters from participation in elections. They impair the efficiency of churches and social, fraternal and other organizations, which depend largely on public gatherings for the efficacy of their work. They contribute also to the unattractiveness, isolation and the monotony of country life, which in turn are responsible for the desertion of rural pursuits, especially by the young. Experts in mental ailments agree that women in remote sections are the chief sufferers from the restriction to social intercourse, which bad roads impose."

In his message to the general assembly, the Governor also recommended that provision be made for the employment of the inmates of the penitentiaries in road work. The legislature has adopted a bill to that effect, and this will lead to many good results.

Before dismissing the committee the Governor is quoted as follows:

"I want you gentlemen to give to the positions to which I have appointed you the best that is in you and to work in cooperation with me for the improvement of our roads. Nothing that we can do will mean more to the state of Illinois than to improve its roadways. I leave to you the working out of the necessary details. Yours is a big job, but I think I have selected men competent to fill the places that have been given them. I place the matter in your hands and hope that when our terms of office shall be ended we will turn over to our successors a vastly improved system of roadways in the state we all have been called on to serve."

The subject of good roads is of the greatest interest to the medical profession, and every physician in the state should boost along the cause of good roads. Their efforts in this direction will help to ameliorate, as soon as possible, this one of the many hardships to life in the rural districts, which works a special hardship to the life of practitioners who have a rural clientele.

COUNTY TUBERCULOSIS LAW

Elsewhere in this issue will be found an article by Dr. Mammen, calling attention to an Illinois County Tuberculosis Sanitarium Law, and, in a measure, comparing it to the "Glackin Tuberculosis Law," which was published last month.

This is a good law for certain localities, more especially for the sparsely settled counties which contain no cities of considerable size, and such counties should make use of it just as they should make use of any agency with which to wipe out tuberculosis. It should be given publicity, and where practical the public should benefit from it.

We think, however, in most of the counties of Illinois the Glackin Law is more applicable to the purpose intended. The County Law is a sanitarium law, providing only for the building and maintenance of sanitaria, the funds for which are to be had from the general tax fund of the county, which is usually too meager.

The Glackin Law is an anti-tuberculosis law, providing not only for the building and maintenance of sanitaria, but also for tuberculosis dispensaries and other auxiliary institutions for fighting the disease, the funds for which are to be had from a special tax levied for this purpose alone, and not to exceed one mill on the dollar.

The dispensaries and other auxiliary institutions are a great factor in the prevention of tuberculosis. A well-directed dispensary may do a very great deal in educating the people concerning the prevention of this disease. Where more applicable the people should take advantage of the County Sanitarium Law, and when the need arises, secure the extension of the law, so that they may maintain auxiliary institutions and operate them in conjunction with and supplemental to the sanitarium.

MEDICAL ECONOMICS

On occasion, a wise and superlatively good man said, "Let him that is without fault cast the first stone."

The members of the medical profession are so far from perfection that very few of them could claim the right to speak, if faultlessness were the test of critical fitness. But the initial rock of just censure for the grave faults which afflict our fraternity was thrown long ago. Admitting our shortcomings, then, we need not keep silence where frank, honest, kindly criticism from our own ranks may help us to recognize and to cure our ethical infirmities.

It is with this in mind that we publish in this issue the communication from Dr. Breakstone. So far as space will permit, the ILLINOIS MEDICAL JOURNAL will be an open forum for thoughtful discussion of vital matters by the members of the Society.

THE ALIENISTS' AND NEUROLOGISTS' MEETING

In the latter part of June there was held in Chicago, under the auspices of the Chicago Medical Society, a notable meeting of alienists and neurologists, great in what has already been accomplished and equally great in its promise for the future. The gathering originated in a plan of the West Side Branch under the presidency of Dr. W. T. Mefford, who secured a similar meeting last year. This gathering was so successful that it was determined to enlarge the scope of the association and place it this year under the guidance of the Chicago Medical Society. The second meeting was attended by a large number of delegates, among them representatives sent by the

governors of fifteen states. It served to draw public attention to the higher aims of the association and to mark a notable step toward the education of the public and of the general practitioner in the care and prevention of insanity and mental deficiency.

The advance of medical science has brought preventive and social medicine to the front and has demonstrated how great a part the physician as an individual and as a member of a united profession is to play in the social movements of our time. There is no more promising field of effort in preventive medicine than the prevention of nervous and mental disease. The modern trend of united professional effort is well shown in the resolutions passed by this association. These men are no longer content to make mere statements of scientific fact; they contemplate action and show that the physician is not merely a scientist, but a philanthropist and a citizen as well.

The resolutions indicate the direction in which the association hopes to influence public opinion. The first recommends custodial care or sterilization for the feeble-minded, the epileptic, and the criminal insane. This places before the medical profession and the public a very important question. Already the experiment of legislation on this subject is being tried and seems likely to be greatly extended in the near future. This movement needs to be guided to a sane conclusion by the medical profession and every physician has the responsibility of preparing himself to help settle the questions involved.

A second resolution calls attention to the danger to the public from intemperance and insanity among railroad employees, and recommends the exclusion from such service of men who drink either on or off duty and suggests an examination from time to time in order to exclude those found to be mentally unfit.

The third important resolution recommends the teaching of eugenics to high school pupils. To this ought to be added some means of reaching the large proportion of the population whose education does not include a high school course.

A larger attendance is expected next year, and two years from now it is hoped that the meeting will have an international scope. It is not easy to estimate the importance of these meetings, and while we commend the Chicago Medical Society for its forward step we may suggest that other societies may follow by giving similar prominence to topics on which the public needs information and leadership.

Correspondence

MEDICAL ECONOMICS

CHICAGO, Aug. 15, 1913.

To the Editor:—The keynote of medical economics was sounded in the July issue of this JOURNAL by President Whalen. There is no questioning the fact that there are comparatively few physicians, frankly speaking, who honestly get what should be termed a fair living, in keeping with the requirements of a professional life. To earn such a living is also growing more difficult each year, to say nothing of the rise of living expense, so that it is not far-fetched to compare conditions which economically threaten the profession in England with those in America. The outlook bodes ill for us unless the leaders in this country will cease thinking about themselves so much and look more to the welfare of the profession as a whole.

There are very many contributing causes to this economic condition. In all other pursuits for a livelihood, competition has been the main factor in reducing the number of prosperous individuals in their respective callings. In the medical profession, however, competition should be the smallest factor, providing each one in the profession will act as a fractional part of the whole, for the good of the whole. Such, however, is not now and never has been the case, and our leaders are too largely responsible. There is not a student who, when he graduates from a good medical college, is not imbued with the spirit of dignity, honesty and self-sacrifice, which should be the main qualifications of every physician. There is not a graduate of these colleges who does not put on a pedestal of moral idealism the members of his faculty, but when he enters the ranks to earn a livelihood in an upright, dignified manner he soon discovers that very many of the men, whom he held in such high esteem as promoters of the road of ethical practice, do not travel that route themselves, but seek more profitable bypaths along which are to be had for the picking, the cutting of prices, outright stealing of cases, damning brother practitioners, newspaper notoriety, and all the crass commercialisms which the *code of ethics* taught by them in college denounces in no uncertain terms.

Fortunately, not all our old-time teachers are guilty of all these things. The majority of them are honorable men in many particulars, but somehow the self-importance of certain prominent individuals amongst them leaks into the lay press often enough to make good business for them-

selves, no doubt, but to set at naught the ethics they upheld so eloquently in the amphitheater. A few men have striven to control the clinical material of certain medical centers without regard to the effect it would have on the patient, on the profession and on the public at large. In these and other matters selfish ambition and personal and professional jealousy mar the fair figure of medical idealism. Medical education in the recent past must have been worse in Europe than it is to-day in America. If one of our late leading surgeons and pathologists — a foreign graduate in medicine — could pay $400 for the privilege of being on the staff of Cook County Hospital, he must have felt within himself that he did not learn sufficient in his medical course across the water.

Only recently a man of great prominence in the medical profession of this city remarked that he would have been glad to pay for the privilege of being on the Cook County Hospital staff at the time he began the practice of medicine, intimating also that doctors ought to be glad to pay now for the privilege of medically serving Cook County for nothing. No one can doubt that this statement was made in absolute sincerity, but what a reflection on the whole profession and on the system of medical education! What effect would such a statement tend to have on the public at large? Surely doctors should pay the people for the privilege of treating them. Furthermore, in all humanity, should Cook County employ physicians to attend its sick who feel themselves incompetent and are willing to pay for the privilege of completing their education by experimenting on poor patients? The county which calls in the doctor without recompensing him is, by the way, not poor. These are all serious questions, and we intend later to write more specifically on each of the factors herein touched on.

The peculiar attitude which we doctors have assumed and maintained for decades toward this question of the care of the public's sick is illogical and anomalous, and should have, if it has not in fact, had its bad effect on the patient in question. Conscious of the physician's feeling, he should logically conclude that he does not need to pay a doctor, because he is the greatest factor in teaching him his business; indeed, perhaps the patient ought even to receive monetary return for being experimented on. We do not know of any other calling where even for experimental purposes the experimenter does not receive pay for labor and time expended, trying to benefit someone else. There is nowadays almost a house to house canvass for patients by the agents of clinicians looking for clinical material; and many a patient in our metropolitan centers has made all arrangements with his physician to have some condition treated for a certain agreed price when the philanthropic (?) clinical agent appeared and he was carried off to "the great medical college" to have his ailment treated free, while the learned professor expounded this wonderful sickness, thus demonstrating to the patient that had he had that ordinary M.D. attend him, he would have been mistreated and robbed, having actually to pay for service. These physicians of prominence are perhaps not aware of the harm they are doing. They serve on hospital staffs, where, in order to help the institution, they accept patients into the wards for the mere price of a bed, and do not try to find out whether they are able to pay a physician's fee. And we affirm without fear of successful contradiction that there are many more patients in hospital clinics to-day who are able to pay more than an ordinary fee than there are patients treated outside of hospitals who pay less than ordinary fees. And all this is done without impressing on the patient that he is receiving something for nothing. The same class of physicians are trying to control the insurance corporations.

There are now in Chicago upward of two hundred thousand employees who are insured against accident, sickness and injury. There are approximately two hundred thousand patients treated in wards of hospitals and dispensaries free of charge, and there are approximately five thousand physicians in Chicago to take care of the balance of the two million people who "sometimes" pay their doctor bills. To figure out the average income of this remaining 1,600,000 people, from whom the doctors must earn their livelihood, is to see how much there might be for each doctor to make honestly out of the practice of medicine and survive in Chicago. And this does not prevail in Chicago alone, but in all medical centers of America. The hospital and insurance evil are even encroaching on the smaller towns so that the country practitioner's income is also being cut. All this certainly has a demoralizing effect on the profession at large. We must live, and in order to live we must have an adequate income. To this end we must get business, and the door of irregular practice stands open, inviting to easy but tainted money. Quackery is on the increase, and right here we wish to state that quack ads to-day, as bad as they are, do not do as much harm as some of the statements made by some of the men whom we idolize, merely because they wish to rush into print without giving the profession a thought.

The effect this has on the people at large is evidenced by public institutions and hospitals run by the so-called philanthropists, at the expense of the physician, because they can always get a physician to work for nothing, whereaas they have to pay their janitor, fireman, cook and social worker, who with the philanthropist receives this *quid pro quo*. But the physician on the charity staff must do his work or lose the coveted job to the many other fool doctors who are ready to step into it over his professional corpse. And so it comes about that the public has little confidence in the physician's opinion, as evidenced in our farcical expert testimony, and in many expressions that the reporters may get from doctors on any subject for newspaper publication. These evils can be remedied by the profession itself if the individuals who have up to now acted as self-appointed representatives will unite with their fellows for the benefit of the whole profession rather than for their own self-aggrandizement. We should not give out any opinion to the lay press until we have talked it over and reasoned out the effect it would have on the profession as a whole. Then the now self-appointed representatives would have a healthy growth, and their influence would be of lasting value. It is easy to throw stones. Yes, and there are many targets to be hit, and hit hard.

BENJAMIN H. BREAKSTONE, M.D.
32 North State Street.

CONTRACT PRACTICE

CHICAGO, Aug. 15, 1913.

To the Chicago Medical Society, Greeting:—I hereby wish to refer to the Chicago Medical Society "a case," which I believe is of such importance to the medical profession in general, that it should not be allowed to rest as a personal matter, pertaining to myself only.

History.—I was called, April 25, 1913, by Mr. Louis H. Verick of 3122 Indiana Avenue (called on me in person and took me to 3821 Indiana Avenue) to see his employee, Mike Meyer, who was injured. Patient had emergency (first aid) dressing applied before my call. I was employed by L. H. Verick to treat patient. Had to make surgical dressing to bad scalp wound, also one to right elbow for bad laceration and some maceration of tissues, besides ordering medicine for fever and liniment to other parts of body. I state this because I charged $3 a call for material used and services, and subsequently $2 for office dressings, making a total of $44 for entire amount. Patient being well and discharged cured, I presented my bill to Mr. Louis H. Verick. I then received a call from an agent of the Standard Accident Insurance Co., 175 W. Jackson Boulevard, and was informed my bill was too high, etc., and they were willing to make a settlement by paying their customary fees of $2 at residence calls and $1 office calls. I told him that I had nothing to do with the insurance company, that my bill was for services to Mr. Louis H. Verick, that in fact I never did allow any company or individual to put a price on my services, etc., and he then told me I would not get any more work from his company. To this I answered that Mr. Verick employed me in this case and as I was not a scab I did not want to prostitute my profession by cheap labor; at this he drew out a typewritten paper containing the names of many physicians. I regret I did not make notes, but I now distinctly remember seeing the names of A. H. and of Dr. H. (they impressed themselves on my mind more than others, for both are classmates of mine) and the agent stated that "all these physicians are doing and have done work for us and our fees are $2 at residence and $1 for office dressings." I ordered the agent out of my office and informed Mr. Verick that I would look to him to pay the bill; after some more time passed by I sent a letter by mail to Mr. Verick, informing him that the bill was overdue and expected payment of same. Mr. Verick informed me he forwarded the same to the company and asked for sufficient time to get a reply. In the meantime Mr. Louis H. Verick never denied nor disputed my bill, and in fact stated he was responsible, only he could not pay it because the insurance company was responsible to him, as he was paying for the insurance of his employees. Only July 25, 1913, the following was handed me by Mr. Verick, which he received from the Standard Accident Insurance Co. (presumably). Letterhead—Henry B. Bale, Adjuster, Suite 1047, 175 W. Jackson Boulevard; Phone, Wabash 1792.

CHICAGO, July 25, 1913.

Louis H. Verick, Esq.,
3122 Indiana Avenue, Chicago, Ill.

Dear Sir: I have your letter with reference to the bill of Dr. Kercher. We do not propose to pay Dr. Kercher's bill until he reduces it to $35. We have told him this over the telephone, and if he is not satisfied to take that, let him sue for the bill, and we will defend you. We are not going to be held up by him or any other doctor for excessive doctor bills, and that is particularly true when, as a matter of fact, under the compensation act he could not collect anything from you. Dr. Kalliontzis was the first doctor called, and his bill is the only one we ought to pay. We have paid him in full for the first treatment.

Let me suggest this: when Dr. Kercher takes this matter up with you again tell him he must take it up with us, and that it is in our hands entirely.

Yours truly, HENRY B. BALE.

Now, to this I told Mr. Verick that I must not take this matter with them, and I am not going to. So it is up to me to either accept $35 or bring suit against Mr. Verick.

Now there is no doubt in my mind but that many physicians or people in business would accept $35 rather than go to the expense of going to law and waiting a long time for their money. I thank the Lord I am not one of them and I prefer to fight, when a principle is involved, which not only concerns me, individually, but it concerns the entire medical profession and for this last reason I ask the Chicago Medical Society to take interest in this matter.

I ask the Chicago Medical Society to furnish legal services, to sue Mr. Louis H. Verick for the bill, thereby forcing the insurance company to an issue and to make them show that they already *own* a large number of physicians to whom they *dictate prices* and parcel out work, or show this insurance company up as arrogant bluffers.

Very respectfully,

JOHN KERCHER, M.D.

3144 Indiana Avenue.

AUDITOR'S REPORT ILLINOIS STATE MEDICAL SOCIETY, MAY 16, 1913

August 21, 1913.

Board of Directors,
Illinois State Medical Society.

Gentlemen:—We have completed an examination of the accounts, records and vouchers of the Illinois State Medical Society covering the period from May 16, 1904, to May 16, 1913, inclusive, and have submitted to you a complete detailed report on same.

We can say, however, in substance that we found all funds properly accounted for in accordance with the records.

We have also examined the published reports of both the secretary and treasurer appearing in THE ILLINOIS MEDICAL JOURNAL. We found some errors in these published reports when same were compared with the figures in the books of the Society. These errors are evidently of a clerical nature.

We recommend that the Society, in its published reports each year, should be given complete details of receipts and disbursements. In our opinion the reports in the past have not been in sufficient detail to enable anyone to clearly understand them without access to the records.

Furthermore, in order that a comparison can be made with the treasurer's report, we strongly recommend that the secretary's report of receipts cover the same period as the treasurer's report.

Yours very truly,

ERNST & ERNST,
Certified Public Accountants.

REPORT OF EXAMINATION

ILLINOIS STATE MEDICAL SOCIETY

May 16, 1913

Board of Directors, Illinois State Medical Society.

Gentlemen:—In accordance with your request we have made an examination of the books of account and records of the Illinois State Medical Society for a period of nine years from May 16, 1904, to May 16, 1913, inclusive.

We have used May 16, 1904, as a starting point for our audit, as we found on file a signed certificate from the National Bank of Decatur dated May 16, 1904, to the effect that the balance in the bank to the credit of Everett J. Brown, Treasurer, Illinois State Medical Society, on that date was $1,127.45, and this balance agreed with the books of the Illinois State Medical Society on the same date.

We were advised that each year the Treasurer's annual report covering the financial transactions for the preceding year was published in the ILLINOIS MEDICAL JOURNAL, but on examination of these JOURNALS we were unable to find any Treasurer's annual report published after the one for the year ending January 1, 1910, until the year 1913. This last report was from January 1, 1913, to May 16, 1913, and accordingly we submit (on page 184) a statement of the cash receipts and disbursements from May 16, 1904, to May 16, 1913, and these figures are based on the Treasurer's reports which have been published.

In the three years from Jan. 1, 1910, to Jan. 1, 1913, for which we could find no reports, we have endeavored to analyze the receipts and disbursements along the same lines that were followed in the preceding published reports.

In our examination of these published reports we found several discrepancies in the totals as compared with the book records, but in most cases the errors appeared to be in the printing of the figures in the reports. The published report for the year ending Jan. 1, 1909, was very meager and differed in its general arrangement and lack of detail from all the preceding reports. This report contained the following:

Receipts all sources	$20,431.09
Disbursements	10,571.90
Balance on hand Jan. 1, 1909	$ 9,859.19

On Jan. 1, 1909, the general fund amounted to $6,058.69, and the balance in the bank to the credit of Medicolegal Defense Committee amounted to $3,799.50, a total of $9,858.19 or a discrepancy of $1.00, as compared with the published report, if we combine the General and Defense funds. All of the other published reports show the General Fund separate from the Medicolegal Defense Committee Fund.

Our audit of the cash transactions was very thorough. The entries in the cash book representing disbursements were verified by an examination of not

only the cancelled bank checks, but also all other invoices or vouchers on file. In most cases there was a cancelled bank check, as well as a voucher, to support the disbursement, but in all cases we were able to locate either one or the other.

We were unable in the time available to verify the cash receipts from advertisements. This could only be done by a comparison of the cash received with the advertisements appearing in THE JOURNAL, and such a verification would require a lengthy examination. Accordingly we have used the book figures for such receipts without independent verification by us.

According to the records the Secretary has turned over the following amounts:

AMOUNTS TURNED IN BY SECRETARY

	General Fund	Defense Fund	Total
May 16, 1904, to May 18, 1905	$ 2,817.25	.....	$ 2,817.25
May 18, 1905, to Jan. 1, 1906	1,362.58	.....	1,362.58
Jan. 1, 1906, to Jan. 1, 1907	3,639.05	.....	3,639.05
Jan. 1, 1907, to Jan. 1, 1908	7,200.81	$3,427.00	10,627.81
Jan. 1, 1908, to Jan. 1, 1909	7,668.54	4,056.50	11,725.04
Jan. 1, 1909, to Jan. 1, 1910	7,232.84	4,463.00	11,695.84
Jan. 1, 1910, to Jan. 1, 1911	6,364.72	4,054.00	10,418.72
Jan. 1, 1911, to Jan. 1, 1912	7,716.45	4,580.00	12,296.45
Jan. 1, 1912, to Jan. 1, 1913	8,246.50	5,627.00	13,873.50
Jan. 1, 1913, to May 16, 1913	3,914.30	3,637.00	7,551.30
	$56,163.04	$29,844.50	$86,007.54

We have verified these receipts by direct reference to the Secretary's records, although we have not confirmed any of the amounts received by the Secretary by direct correspondence with the party remitting to him.

According to the detailed schedule of cash receipts and disbursements, the balance on hand May 16, 1913, in the General Fund amounted to $5,570.68, and we have reconciled this amount with the balance on hand in the Farmers' State Bank, Belvidere, Ill., on July 1, 1913, as shown by a signed statement received from this bank.

We show a statement of the earnings of "THE JOURNAL" (on page 185), and according to this statement, which is based wholly on the cash receipts and disbursements, the income from advertisements, etc., from May 16, 1904, to May 16, 1913, amounted to $34,900.99, while the expense (exclusive of the salary of Dr. G. W. Kreider) totaled $61,388.20, or a net loss for the nine years of $26,487.21.

On page 185, we show an exhibit of the Medicolegal Defense Committee from September, 1907, to July 9, 1912. On this date the cash on hand amounted to $8,923.15 and we were unable to find any record of the transactions of this committee from that date to Jan. 1, 1913, although we found that the Secretary, according to his records, had turned over to the fund during the period stated the sum of $921.00. After taking this into consideration the balance on hand would amount to $9,844.15 on Jan. 1, 1913. On the same date, however, the present Treasurer starts his published report with a balance on hand of $9,958.93, an increase of $114.78, and this may be interest on the savings account, but we were unable to confirm same, owing to the limited time available for this report.

This published report showed a balance in the Defense Fund on May 16, 1913, of $11,595.93, and according to the Secretary's books he turned over to this fund early in June, 1913, the amount of $269.00 which would increase the balance on hand July 1, 1913, to $11,864.93.

According to a certificate from the Farmers' State Bank, Belvidere, Ill., the balance in this fund on July 1, 1913, amounted to $12,042.26, and this increase of $177.33 is possibly interest earned on the savings account.

We call your attention to the large amounts which have been paid by the Medicolegal Defense Committee to Dr. N. H. Moyer, and up to the present writing we have seen no vouchers or invoices of any kind to support these payments. It is our opinion that your vouchers for expenditures, even though properly approved, in many cases do not carry sufficient information to enable us to determine whether they are proper expenditures of the Society, and we recommend that a more up-to-date system of accounting be installed at once.

The time available for this report was not sufficient to enable us to go into all matters as thoroughly as we should have liked to do, but we believe that we have covered substantially all matters that could be gone into in that time.

Yours very truly,

[SEAL] ERNST & ERNST,
Certified Public Accountants.

REPORT OF EXAMINATION

DR. H. N. MOYER
ILLINOIS STATE MEDICAL SOCIETY

Board of Directors, Illinois State Medical Society.

Gentlemen:—Supplemental to our report of July 22, 1913, on the cash transactions of the Illinois State Medical Society, we submit herewith a statement of the receipts and disbursements of Dr. H. N. Moyer, representing the Defense Fund of the Illinois State Medical Society for the period from Oct. 1, 1906, to June 30, 1913, inclusive.

We have verified the disbursements by comparing them with vouchers submitted to us. There were no vouchers, however, for a number of the disbursements and we append a list of the items we were unable to verify.

The balance of $547.39, as shown on this report, agrees with the balance as shown by the records, but we have not confirmed it by correspondence.

Yours very truly,

[SEAL] ERNST & ERNST,
Certified Public Accountants.

CASH RECEIPTS AND DISBURSEMENTS, ILLINOIS STATE MEDICAL SOCIETY, FROM MAY 16, 1904, TO MAY 16, 1913

	May 16, 1904, to May 18, 1905.	May 18, 1905, to Jan. 1, 1906	Jan. 1, 1906, to Jan. 1, 1907.	Jan. 1, 1907, to Jan. 1, 1908.	Jan. 1, 1908, to Jan. 1, 1909.	Jan. 1, 1909, to Jan. 1, 1910.	Jan. 1, 1910, to Jan. 1, 1911.	Jan. 1, 1911, to Jan. 1, 1912.	Jan. 1, 1912, to Jan. 1, 1913.	Jan. 1, 1913, to May 16, 1913.
RECEIPTS										
Balance on hand at beginning	$1,127.45	$ 703.44	$ 900.50	$1,777.39	$3,291.88	$6,058.69	$ 713.70	$ 1,135.00	$ 105.17	$4,375.25
Advertisements, etc	2,731.50	2,700.00	3,400.26	3,556.08	4,200.17	4,420.44	4,384.16	3,806.78	4,155.53	1,546.07
E. W. Weis	2,817.25	1,362.58	3,639.05	7,200.81	7,668.54	7,232.84	6,364.72	7,716.45	8,246.50	3,914.30
Chicago Medical Society	1,591 50	367.50	1,368.00	.....	.....	.....	.....	.....	.....	.....
Interest	.....	.....	.....	.....	.....	.....	115.90	.....	345.45	.....
Savings fund	.....	.....	.....	.....	.....	.....	.....	.....	5,000.00	.....
	$8,177.70	$5,133.52	$9,307.81	$12,534.28	$15,160 59	$17,711.97	$11,578.48	$12,658.23	$17,852.65	$9,835.62
DISBURSEMENTS										
Journal	$4,887.75	$2,389.17	$3,993.20	$4,375.50	4,084.76	5,273.65	4,385.65	4,833.65	5,606.32	1,707.00
Discount and rebates	13.58	37.29	39.14	35.90	21.62	2.85	.....	.....	.....	1.00
Expense Editor	73.73	.....	972.76	860.00	1,073.08	1,130.00	1,100.00	1,489.90	1,368.00	563.00
Expense F. R. Green	.....	.....	460.00	511.98	.....	.....	.....	.....	.....	.....
Expense George E. Baxter	.....	.....	.....	1,099.27	1,247.37	1,841.10	1,708.41	1,794.16	1,736.08	671.33
	$4,975.06	$2,426.46	$5,465.10	$6,882.65	$6,426.83	$8,247 60	7,194.06	$8,117.71	$8,710.40	$ 2,942.33
Honorariums	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,550.00	1,550.00	.....
Commission	287.50	7.50	.....	.....	300.00	65.00	.....	22.56	.....	.....
Judicial Council	629.95	463.23	575.81	335.19	359.52	331.22	290.38	362.65	650.05	222.05
Printing, etc	56.50	52.35	240.70	179.25	153.70	113.50	163.25	193.00	137.30	147.25
Expense Secretary	289.20	17,69	38.16	353.11	311.67	335.86	442.74	379.00	441.45	352.48
Expense Treasurer	15.00	12.25	.....	41.40	.....	.....	.....	.....	.....	.....
William Whitford	221.05	233.54	.....	429.80	161.75	205.05	.....	394.22	327.37	.....
Expense	.....	20.00	22.50	21.00	183.88	129.95	88.35	503.98	745.72	26.83
Carl E. Black	.....	.....	188.15	.....	.....	.....	.....	.....	.....	.....
Dr. Baum	.....	.....	.....	.....	204.55	.....	.....	.....	.....	.....
Savings fund	.....	.....	.....	.....	.....	5,000.00	.....	.....	.....	.....
Medical Legislation	.....	.....	.....	.....	.....	970.09	.....	414.96	112.11	25.00
Dr. Harold C. Ernst	.....	.....	.....	.....	.....	100.00	.....	.....	.....	.....
Major W. M. Ireland	.....	.....	.....	.....	.....	500.00	.....	.....	.....	.....
State Directory	.....	.....	.....	.....	.....	.....	1,126.20	.....	.....	.....
Expense President	.....	.....	.....	.....	.....	.....	138.50	.....	.....	.....
Typewriters	.....	.....	.....	.....	.....	.....	.....	82.00	.....	.....
Medical Education	.....	.....	.....	.....	.....	.....	.....	219.98	.....	.....
Bureau of United Medical Society	.....	.....	.....	.....	.....	.....	.....	263.00	16.00	.....
Morgan Co. Library	.....	.....	.....	.....	.....	.....	.....	50.00	392.85	498.50
Dr. W. K. Newcomb	.....	.....	.....	.....	.....	.....	.....	.....	240.15	.....
Dr. C. J. Whalen	.....	.....	.....	.....	.....	.....	.....	.....	154.00	50.50
	$7,474.26	$4,233.02	$7,530.42	$9,242.40	$9,101.90	$16,998.27	$ 10,443.48	$12,553.06	$13,477.40	$4,264.94
Balance on hand at end	$ 703.44	$ 900.50	$1,777.39	$3,291.88	$6,058.69	$ 713.70	$ 1,135.00	$ 105.17	$ 4,375.25	$5,570.68

OPERATING STATEMENT ILLINOIS MEDICAL JOURNAL

	Income Advertisements	Expense	Profit * Loss
May 16, 1904, to May 18, 1905	$ 2,731.50	$ 4,975.06	$ 2,243.56
May 18, 1905, to Jan. 1, 1906	2,700.00	2,426.46	273.54*
Jan. 1, 1906, to Jan. 1, 1907	3,400.26	5,465.10	2,064.84
Jan. 1, 1907, to Jan. 1, 1908	3,556.08	6,882.65	3,326.57
Jan. 1, 1908, to Jan. 1, 1909	4,200.17	6,426.83	2,226.66
Jan. 1, 1909, to Jan. 1, 1910	4,420.44	8,247.60	3,827.16
Jan. 1, 1910, to Jan. 1, 1911	4,384.16	7,194.06	2,809.90
Jan. 1, 1911, to Jan. 1, 1912	3,806.78	8,117.71	4,310.93
Jan. 1, 1912, to Jan. 1, 1913	4,155.53	8,710.40	4,554.87
Jan. 1, 1913, to May 16, 1913	1,546.07	2,942.33	1,396.26
	$34,900.99	$61,388.20	$26,487.21

NOTE.—(*a*) The above does not include the salary of Dr. G. N. Kreider, which has been placed under the heading "Honorariums." From May 16, 1904, to June 1, 1911, his salary was paid at the rate of $600; since June 1, 1912, his salary has been paid at the rate of $900 per year. In case all of his services are in connection with THE JOURNAL, his salary should also be included in the expenses to arrive at the losses. (*b*) The figures shown above were taken from the cash receipts and disbursements of the Illinois State Medical Society.

MEDICOLEGAL DEFENSE COMMITTEE

ILLINOIS STATE MEDICAL SOCIETY

From September, 1907, to July, 9, 1912

RECEIPTS

Sept.,	'07	Dr. E. W. Weis	$ 2,961.50
Jan. 1,	'08	Dr. E. W. Weis	465.50
May 6,	'08	Dr. E. W. Weis	2,465.50
Sept. 1,	'08	Dr. E. W. Weis	1,071.00
Oct. 31,	'08	Ill. Hom. Med. Assn.	316.00
Dec. 28,	'08	Dr. E. W. Weis	520.00
May 6,	'09	Dr. E. W. Weis	2,893.00
July 26,	'09	Dr. E. W. Weis	932.00
Dec. 9,	'09	Dr. E. W. Weis	638.00
Jan. 1,	'10	Interest	52.50
April 5,	'10	Dr. E. W. Weis	564.00
May 6,	'10	Dr. E. W. Weis	2,339.00
Oct. 1,	'10	Dr. E. W. Weis	1,151.00
Jan. 1,	'11	Interest	30.00
Feb. 11,	'11	Dr. E. W. Weis	734.00
May 4,	'11	Dr. E. W. Weis	2,968.00
May 6,	'11	Dr. E. W. Weis	878.00
Jan. 17,	'12	Dr. E. W. Weis	962.00
May 6,	'12	Dr. E. W. Weis	868.00
June 5,	'12	Dr. E. W. Weis	2,876.00
June 8,	'12	Certificate of deposit.	2,000.00
June 8,	'12	Interest	30.00
July 1,	'12	Savings fund	1,500.00
July 1,	'12	Interest	208.15
			$29,423.15

DISBURSEMENTS

Sept.,	'08	Dr H. N. Moyer	$1,000.00	
Dec.,	'08	Dr. H. N. Moyer	1,500.00	
June 23,	'08	Dr. H. N. Moyer	1,500.00	
Jan. 11,	'09	Dr. H. N. Moyer	1,500.00	
June 9,	'09	Savings fund	1,500.00	
June 9,	'09	Certificate of deposit.	2,000.00	
Sept. 28,	'09	Dr. H. N. Moyer	1,500.00	
Dec. 15,	'09	Dr. H. N. Moyer	1,500.00	
April 23,	'10	Dr H. N. Moyer	500.00	
Dec. 7,	'10	Dr. H. N. Moyer	2,000.00	
Feb. 11,	'11	Dr. H. N. Moyer	1,000.00	
May 5,	'11	Dr. H. N. Moyer	2,000.00	
Dec. 16,	'11			$20,500.00
June 27,	'12	Dr. H. N. Moyer	2,000.00	
		Dr. H. N. Moyer	1,000.00	
July 9,	'12	Bal. to Dr. Carl E. Black		$8,923.15

RECEIPTS AND DISBURSEMENTS

DR. H. N. MOYER

ILLINOIS STATE MEDICAL SOCIETY

Oct. 1, 1906, to June 30, 1913, Inclusive

RECEIPTS

Illinois State Medical Society	$19,100.00	
Court costs paid and refunded	634.45	
Chicago Homeopathic Medical Society	81.00	
Donation	5.00	
Sundry	1.00	
		$19,821.45

DISBURSEMENTS

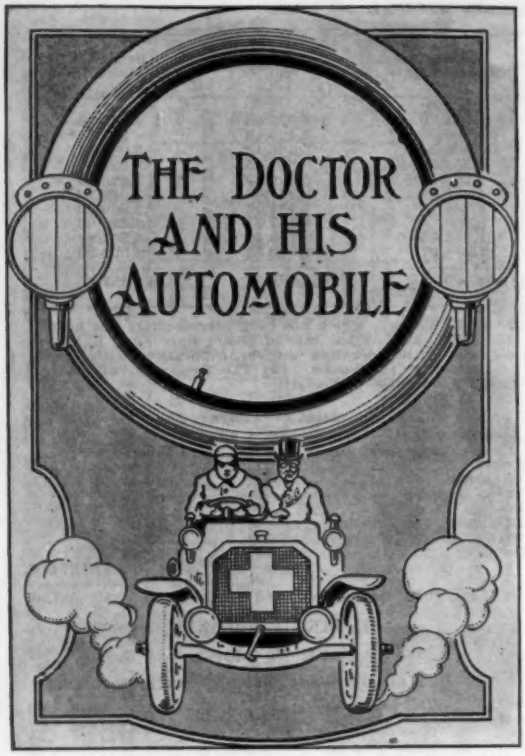
Attorney fees, court costs, witnesses' expenses, etc.	$17,230.11	
Books	58.00	
Exchange	10.65	
Office supplies	53.19	
Postage	55.16	
Stationery and printing	59.15	
Stenographers' services	1,753.00	
Sundry	54.80	
		$19,274.06
June 30, 1913, Balance on hand		$ 547.39

MISSING VOUCHERS

DR. H. N. MOYER

ILLINOIS STATE MEDICAL SOCIETY

Oct. 1, 1906	Postage	$ 1.00
Oct. 10, 1906	Postage	2.00
Oct. 12, 1906	Exchange	.25
Oct. 13, 1906	Postage	4.48
April 6, 1907	American Medical Assn., Reprints	3.00
June 19, 1907	Postage	1.00
Aug. 7, 1908	Exchange	1.10
Sept. 19, 1908	Postage	2.00
Jan. 15, 1909	Exchange	1.10
April 24, 1909	Dr. H. N. Moyer, Expenses	22.50
Sept. 29, 1909	Exchange	1.10
Dec. 1, 1909	H. N. Moyer, telegrams, postage, etc.	5.40
Dec. 16, 1909	Exchange	1.10
Jan 12, 1910	E. L. Lamoreaux, Steno. salary for December, 1909, and January, 1910	49.00
Jan. 12, 1910	Postage	2.00
Feb. 24, 1910	Postage	2.00
April 3, 1910	Dr. H. N. Moyer, expenses to Indianapolis	62.50
Dec. 12, 1910	Dr. H. N. Moyer, expenses to Springfield	23.80
Dec. 12, 1910	Exchange	1.50
Feb. 13, 1911	Exchange	.75
June 2, 1911	Exchange	1.50
Jan. 3, 1912	Exchange	1.50
Jan. 17, 1912	To Mt. Vernon Willoughly	67.00
Jan. 22, 1912	Typewriting	.50
Jan. 22, 1912	Folders	.35
Jan. 24, 1912	Paper and folders	2.45
Jan. 28, 1912	Saylor, stenographer	25.00
April 30, 1912	Saylor, stenographer	20.50
May 3, 1912	Saylor, stenographer	23.00
June 30, 1912	Saylor, stenographer	30.00
July 31, 1912	Postage	4.00
July 31, 1912	Stationery	8.00
July 31, 1912	Saylor, stenographer	23.00
July 31, 1912	Exchange	.75
Aug. 31, 1912	Stenographer	30.00
Sept. 30, 1912	Stenographer	25.00
Oct 31, 1912	Stenographer	25.00
Nov. 30, 1912	Stenographer	30.00
Dec. 31, 1912	Stenographer	23.00
Jan. 7, 1913	Special letter	6.00
Jan. 17, 1913	Postage	4.00
Jan. 17, 1913	Supplies	1.80
Nov. 7, 1912	To Bloomington and expenses	57.00
Jan. 31, 1913	Stenographer	23.00
Feb. 28, 1913	Stenographer	23.00
Mar. 31, 1913	Stenographer	23.00
Feb. 28, 1913	Postage	4.00
April 20, 1913	Stenographer	20.00
May 20, 1913	Stenographer	18.00
June 5, 1913	Chicago Medical Book Co., books	2.00
June 30, 1913	Stenographer	18.00
June 30, 1913	Stenographer	21.00
June 30, 1913	Postage	4.00



Auto Sparks and Kicks

With each issue of THE JOURNAL there appears on this page items of vital interest to physicians whose use the automobile. Items of that nature solicited.

FOR EASY STARTING

Priming cups placed near the cylinders in the manifold, and priming fluid composed of half gasoline and half ether will make your engine start easily in cold weather.

TOO EASY STARTING

One of the dangers incidental to the use of the electric starter is the facility for starting the car it places in the playful hands of meddlesome children. Removal of the switch plug should become a habit.

SHOCK ABSORBERS

Shock absorbers are rapidly becoming a necessity rather than a luxury and the automobile engineers of to-day are realizing more and more that an unassisted leaf spring cannot support the reflexion or recoil of a suddenly applied load. —*The Automobile.*

A COUPE ADVANTAGE

A great advantage of a coupé body is the insurance against death from crushing in case the car is overturned.

AXLE STRAIN

The most severe strain that can be placed on a rear axle or driving gear is from efforts to get out of a mud hole by backing up a little and then rushing forward on slow gear.

REPLACING SPARK PLUGS

Spark plugs should not be forced into position by severe wrench action. They should seat firmly against a copper-asbestos gasket with but little more force than can be applied with the fingers.

TIRES COST MONEY

The cost of keeping tires repaired and renewed is the greatest item in the up-keep expense.

Why do tires blow out? Why do they wear out so soon? Simply because they are not kept inflated to the proper pressure.

Very few motorists get from their tires the mileage they pay for and which any good make tire would give if kept properly inflated.

Looks deceive. One of the strange things from the point of view of the autoist of limited experience is that a tire with an air pressure of 35 pounds per square inch looks as well inflated as one that has 90 pounds pressure. If run at the former pressure, however, the tire will flex out after a few hundred miles running, whereas if maintained at 90 pounds it will run from 5,000 to 10,000 miles.

The only way to get long service from your tires is to know that the tires are kept properly inflated at all times.

The reason is very clearly explained:

"The side walls are the weakest part of a pneumatic tire, for here most of the bending action takes place. The more the side walls are kneaded or bent, the sooner they will break down and separate. If a tire is run partially inflated, this kneading action is violent and the tire is bent sharply every time it hits an obstruction. If the tire is kept properly inflated, the converse is true. A tire may be perfectly round under load and yet have only 45 pounds of air in it when it should have 90. The use of a reliable air pressure register is the only way to determine accurately whether or not the tires are properly inflated."

Society Proceedings

CLARK COUNTY

Clark County Medical Society met in the M. E. Church, Westfield, Ill., Aug. 14, 1913, at 2 p. m. Members present: McCullough, Johnson, Haslit, R. H. Bradley, Anderson, Pearce, Hall, Marlow and Weir. Visitors: Drs. Hinkley of Westfield and F. Buckmaster of Effingham.

Dr. R. H. Bradley read Dr. S. C. Bradley's well prepared paper on "Antityphoid Vaccination," reviewing the literature or history of this valuable vaccine and urging its use.

Dr. Marlowe considers it a preventive of importance and thinks it may prove curative also.

Dr. Buckmaster would use it much for immunizing, when people are exposed.

Dr. Johnson recited his observation in a family where two members were vaccinated and had no infection and the others got typhoid fever from the well water. No reaction from vaccine was observed except one had local infection, possibly incidental from other germs.

Others participated in the discussion, recommending the use of antityphoid vaccination, but suggesting care in using all vaccines urged on the profession, except those well understood and plainly indicated.

Dr. Bradley described his experience with vaccine in one well man who had very little reaction and no typhoid. Another case in active fever seemed to be benefited with no untoward symptoms.

Dr. Marlowe reported further on his case of uremia in pregnancy; premature delivery was made and woman and baby are doing fairly well.

Dr. Hinkley reported a case in which a catheter was introduced into the uterus to produce abortion. After twenty-four hours the catheter was removed and introduced another twenty-four hours and woman went on to term.

A minimum fee bill of $5 for giving the three doses of antityphoid vaccine was adopted.

Society adjourned. L. J. WEIR, Secretary.

ANTITYPHOID VACCINATION

S. C. BRADLEY, M.D., MARSHALL, ILL.

The only phase of typhoid fever which I have not heard thoroughly discussed at our meetings is antityphoid vaccination. Therefore I have chosen this subject to get it before the society for discussion.

First let me quote the well known statistics of the United States Army during the Texas maneuvers, March to July, 1911. This was the first general compulsory use of the vaccine as the previous ones had been voluntary. At the largest camp, at San Antonio, there were nearly 13,000 men stationed. All not previously treated were vaccinated. Among the 13,000 men there developed one case of typhoid and he recovered. The camp was kept in as good sanitary condition as possible, but the men had free access to the city, eating and drinking in all sorts of places. In San Antonio during the four months of the camp there were reported forty-nine cases of typhoid with nineteen deaths. Compare this one case and no death with the 2,693 cases and 248 deaths from typhoid during a four or five months' camp of about 10,000 soldiers at Jacksonville, Fla., in 1908, without vaccination.

Such examples of the value of the vaccine could be given by the dozen, for recent literature is full of them. The results are as striking in civil life as in the army and navy. In the latter, last year, there were only three cases of typhoid and no deaths.

The only poor results seen were in the Boer war, where 100,000 British soldiers were vaccinated, but typhoid was not much decreased. There was a reason. The vaccine was not properly made, being heated far too much to give good results.

The vaccine is a culture of typhoid bacilli, killed by heating to only 127 F. for one hour and then 0.25 per cent. tricresol is added to make sure of the sterility of the vaccine.

The vaccination, to be complete, must consist of three injections given ten days apart. The first dose is one-half billion bacilli, the second and third are each one billion.

The reaction is usually very mild, consisting of a large sore area at the site of injection, slight or moderate fever, sometimes slight aching all over, all of which are gone in twenty-four to forty-eight hours. In all the literature which I have read there have been absolutely no dangerous reactions after the injections.

With this much proved, that it is harmless, that it gives immunity from typhoid infection, its application to our cases becomes clear. We must give it to all children and young adults who live in or are going into a neighborhood where typhoid is prevalent; we should give it to all, of any age, who are directly exposed to cases of typhoid. From my reading and from my own experience I believe it should also be given to all cases of typhoid fever seen during the prodromal stage or during the first week of the fever, at which time there are still few or no bacilli in the blood stream. We have not nearly as much information as we should have on its value after the onset of the fever, because in all the immunizing tests no case was allowed to take the vaccine unless perfectly well. This gave better records in its early trials, but limited our knowledge of its uses. However, it was accidentally given in some cases in the prodromal stage, with the result that they ran very mild courses.

There is one danger in the use of so efficient a preventive of typhoid fever, namely that those about a typhoid case, being vaccinated and feeling themselves immune, may neglect to take all the usual sanitary precautions to prevent its spread. Vaccination is only one phase in an evolution, a make-shift to protect us until we learn to eradicate typhoid completely by more perfect sanitary control of all typhoid cases and other sources of typhoid infection.

In conclusion might I suggest that if any members of our society will use the vaccine in their typhoid cases this fall, they keep accurate records of their cases, and let some member of the society summarize the records and results in a paper next spring.

CLINTON COUNTY

The Clinton County Medical Society held a meeting August 12, at Trenton, with the following program: Dr. E. W. Fiegenbaum of Edwardsville gave an address on "Organization." Dr. J. O. Roane, Carlyle, read a paper on "Puerperal Infection." This paper was discussed by Dr. J. W. DuComb of Beckemeyer. Dr. A. W. Carter, Trenton, read a paper on "Summer Diseases of Children." Discussion by Drs.

O. O'Neil of Shattuc and L. Niess of Trenton. This was a very good meeting, the address by Dr. Fiegenbaum being especially noteworthy. Dr. Phil. Griesbaum of Lebanon attended as a visitor.

L. NIESS, Secretary.

COOK COUNTY

CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY

Regular Meeting, March 18, 1913

A regular meeting was held, with the president, Dr. J. Gordon Wilson, in the chair.

Dr. C. H. Long reported a case of "Stenosis of the Right Auditory Meatus."

Dr. J. Holinger presented a series of specimens of "Otosclerosis."

Dr. J. Gordon Wilson presented specimens showing gross lesions of the middle ear. He also showed a young man on whom he had recently operated for acute mastoid and temporo-sphenoidal abscess.

Dr. Otto T. Freer showed an esophageal bougie fitted with a wax spindle-shaped enlargement for dilatation of cicatricial strictures of the esophagus.

Dr. Joseph C. Beck discussed Dr. Wilson's case.

Dr. Shambaugh reported a case of brain abscess recently under his observation. This was discussed by Drs. Freer, Fletcher and Hawley.

Dr. Fletcher demonstrated a case of double fistula of the ears and another case of destruction of the function of the labyrinth following a radical mastoid operation. He then read the following paper:

CLINICAL VESTIBULAR NYSTAGMUS

JOHN R. FLETCHER, M.D., CHICAGO

It is quite important, in familiarizing ourselves with the use of vestibular nystagmus in otology, to remember that there are many cases which do not come under the rules and that all cases of this type of nystagmus do not originate in the ears—that is, they are extracranial, as, for instance, the nystagmus with vertigo from auto- and other intoxication, uterine vertigo, etc. No direct ear symptoms and none pointing directly to the cranial contents will speedily put us right on these cases. Other cases, manifestly of the gravest, are at present quite beyond diagnostic certainty and are helped but little by the symptom under consideration. However, in diagnosing and differentiating serous and suppurative, circumscribed and diffuse, manifest and latent labyrinthitis; hyperemia and anemia of and hemorrhage within the labyrinth, and retrolabyrinthine diseases from one another and from non-otologic diseases, its place is well fixed and its value great. The patients we see are referred or come of their own accord; we are asked to see the first because of the nystagmus, and are consulted by the second because they have vertigo. They know nothing of the nystagmus, but for various reasons believe their vertigo comes from the ear or nose, as, for instance, the first patient demonstrated by him that evening, who came complaining of brief attacks of severe vertigo, with sometimes nausea whenever he blew his nose. Careful examination determined beyond doubt that he had a fistula in both ears, which is uncommon, and, further, that but one of them is affected by the nose-blowing. We learn the latter from the fact that performing the fistula test on the left side produces nystagmus in the same direction, as by blowing the nose, but its velocity and excursion are not so great. If we make the same test on the right, the result is identical with the nose-blowing. This and the unique fact that the route of the air current from the Eustachian tube can be followed with the eye make it certain. In addition, a pinhole perforation of the closely adherent left drumhead, directly over the oval window, designates the site of the fistula. Moreover, this perforation would allow air coming from the tube to escape. Another point to make is that gentle pressure over the site of the perforation with a probe wound with cotton causes nystagmus, much the same as the fistula test. The latter is made by carefully blowing air into the external auditory canal through a hollow olive-shaped hard rubber point from a small rubber bag and tube.

Of the three clinical tests the fistula test, turning, and the caloric test, the latter is the most constantly useful. The speaker's second patient brings out this point quite well. Her reponse to the fistula test is negative, though one is visible on the right and freely exposed to the pressure of air *because* of tubal closure after the radical mastoid operation. She is totally deaf in this side. Schwabach localized in the left; Rinné negative. She responds very slightly to turning either to right or left—so slightly that unless very closely observed one might report the response absent. Her response to the caloric test on the right is negative. All these facts signify beyond a doubt total functional inactivity—a functional death of the right labyrinth. The whole exposed lateral labyrinth wall was irrigated with ice water for a long time, without result. The same water used in the left ear caused horizontal and rotary nystagmus to the diseased side, but not so promptly nor so vigorously as in the normal person. Quite warm water caused to flow into the left ear caused a rather feeble rotatory nystagmus to the good or irrigated ear. These caloric tests to the left ear tell us that her left labyrinth is functionating. If we had no other information than the caloric test given us, we could safely diagnose a dead labyrinth on the right and a functionating one on the left, though the left response is normal only in the direction and plane of the nystagmus, not in quickness and degree. In other words, what is known as readjustment has taken place—the good labyrinth is somewhat less keenly doing the work of both. Their action and reaction on each other has been lost—there is no longer synchronism. The normal reaction to turning a patient ten times around the vertical axis is nystagmus in the direction of turning during turning and in the opposite direction after turning. In turning this patient to the right there is no after-nystagmus, and the usual vertigo is absent. In turning to the left the after-nystagmus is so slight as to amount almost to nothing. When we use the turning test to discover pathologic labyrinthine conditions, the rule is that if one labyrinth gives an after-nystagmus of at most half the duration of the other, the labyrinth giving the short-enduring reaction is pathologic. In this case one does not respond at all and the other barely. We may interpret this as nothing equaling the half or less of almost nothing; that is to say, within the rule. Turning must always be used in case of dry perforations, as irrigation is not to be thought of on account of the danger of causing acute suppuration. Of course, the caloric test may be made

with clean air, warm or cold, or any other cleanly method which may be devised to change the temperature of the labyrinth wall except the use of fluids, as above. The turning tests of Dr. Fletcher's first patient have not been made, as he objects strongly to the vertigo.

Let us suppose a patient complains of vertigo coming on in attacks of from a few seconds to a few hours' duration, of a light or relatively severe grade, with the history of an old chronic suppurative otitis media. We must examine for spontaneous nystagmus by directing the patient to look to the extreme right and left without turning the head. If in this eye position we find nystagmus directed to one or both sides, we may regard the case as circumscribed labyrinthitis; but to make the diagnosis more certain the caloric reaction should be positive, with change of direction of the spontaneous nystagmus to the use of cold when to the right, and of warm water when to the left. There should be a response to the turning test, with the comparative difference mentioned above. The hearing test should be positive. The fistula test should be made and will usually be found positive, though a fistula may be present without a positive response to the test, due either to the escape of the air or to some obstruction to pressure, such as cholesteatoma, granulations, etc. Diffuse serous labyrinthitis occurs in acute suppurative otitis chronica, suppurative otitis media, and follows the radical mastoid operation. The characteristic nystagmus is toward the sound side, rotatory and severe. Not infrequently the circumscribed changes to diffuse serous or diffuse suppurative labyrinthitis. The question of a labyrinth operation is thrust before us, and is settled by the differential diagnosis. In both cases the nystagmus will be directed to the sound side and is severe. If any sign of functional activity of the diseased side remains, namely, response to the caloric, turning, fistula and hearing tests, the case is one of serous labyrinthitis. Diffuse suppurative labyrinthitis is totally destructive and very dangerous to the cranial contents. In such case there is no response to tests, and so far as they are concerned we must diagnose diffuse suppurative labyrinthitis. Unfortunately, we have reports of operated cases in which all reactions failed which were not suppurative, and others in which the labyrinth operation was done which recovered. We must, therefore, conclude that the serous labyrinthitis sometimes causes the picture of diffuse suppurative. These cases cannot be clinically differentiated from the diffuse suppurative. There is a great deal more to be said about serous labyrinthitis, but as we are dealing more particularly with the symptom, nystagmus, from the clinical standpoint, it may be well not to go too far afield, but proceed to the next and most dangerous disease of the labyrinth, namely, diffuse suppurative labyrinthitis.

No picture is quite the same as that of the serous. Severe vertigo, nystagmus to the sound side, nausea, vomiting and disturbance of equilibrium. This is the manifest type. Latent diffuse suppurative labyrinthitis progresses more slowly. The history will show complaint of attacks of vertigo at intervals of greater or less time through the course of years. There will be no response to any of the function tests of the labyrinth—hearing test negative, function test negative, turning test negative, and no fistula symptom. The only possible symptoms are, first, very small spontaneous rotatory nystagmus, both right and left, when the glance is in these respective extreme directions. Second, the marked difference in the duration of the after-nystagmus following turning to the right and left, head erect. Ruttin gives the difference as from one to three to six. Let us suppose the right labyrinth to be the seat of the trouble—so long as true compensation, as defined by Ruttin,[1] has not taken place, the result of turning ten times to the right, head erect, will be an after-nystagmus to the left of from fifteen to thirty seconds' duration, while turning to the left, used in like conditions, created an after-nystagmus of about five seconds' duration. When complete compensation has taken place, that is, when not the least particle of function remains in the diseased labyrinth, the sound side assumes the function of both sides, but somewhat less acutely, as follows: The after-nystagmus following ten turnings, either to the right or left, head erect, in the opposite direction to turning for ten to fifteen seconds. In other words, the after-nystagmus again becomes equal to both sides, differing from the normal in that its duration is reduced to one-half or one-third or less. The sound labyrinth does all of the work, but is only able to produce half the result in point of duration. Several authors have reported necrosis with sequestration of a part or the whole of the labyrinth. These cases, of course, are latent suppurative labyrinthitis and sequestration may be considered the last symptom, unless we add facial paralysis, which now takes place. Ruttin mentions two cases in the book above named in which the fistula symptom was present after sequestration, showing that some filaments of the nervous end organ yet remained. The early picture seen in traumatic destruction or hemorrhage into one labyrinth is quite the same as in diffuse suppurative and extreme serous labyrinthitis, but here we are not dealing with a case of old suppurative otitis media, while circumscribed serous and suppurative labyrinthitis of necessity follows otitis media. On the other hand, it must not be forgotten that an otitis media may follow the trauma. The trauma caused by the radical mastoid operation not infrequently converts a circumscribed into a diffuse labyrinthitis. The nystagmus characterizing (though we rarely see it) the circumscribed labyrinthitis should not change after the radical operation. If it does, it is spontaneous rotatory and directed to the sound side. The great question, then, to be decided is between the serous and suppurative diffuse labyrinthitis. Clinically, to-day we must consider all cases showing no reaction to the fistula symptom, hearing, caloric and turning tests, with strong nystagmus to the sound side following chronic suppurative otitis media, diffuse suppurative labyrinthitis. The accompanying symptoms of nausea, vomiting and disturbances of equilibrium are, of course, usually present.

While the above relating to nystagmus is the rule, in a considerable number of cases of suppurative labyrinth destruction there is a horizontal nystagmus to the diseased side. Further, the nystagmus to the sound side may be compound; that is, both horizontal and rotatory. When there is a nystagmus to both sides, by glancing in the extreme direction, one may be confused who thinks of the rule that

1. Ruttin: Klinik der Serösen und eitrigen Labyrinth-Entzündungen.

nystagmus is increased when the patient glances toward the quick component and decreases or stops completely when the glance is in the opposite direction. An important fact is that the nystagmus emanating from the labyrinth is strongest at the beginning, gradually growing weaker and weaker until it ceases completely.

It is difficult to write of clinical nystagmus and keep strictly to the text when it comes to the consideration of serous and suppurative labyrinthitis, because the nystagmus is the same in both cases during the time when the differential diagnosis must be made, if possible, though the attempt has been made to direct attention to the nystagmus throughout the paper. The real danger to the life of the patient is through intracranial, that is, extralabyrinthine, complications, of which there are two in particular, from labyrinthitis, abscess and meningitis. Fortunately the nystagmus serves us here and that, too, in the midst of the symptom storm.

In cerebellar abscess the nystagmus may be directed to the sound as well as to the diseased side. Characteristic for this nystagmus is it that as the disease progresses the nystagmus becomes more intense, ultimately reaching such a grade as is never seen in labyrinth disease.[2] In labyrinth disease the nystagmus to the sound side predominates and, last, after that which may have been directed to the diseased side ceases. If this nystagmus suddenly changes to the sound side and is strong, with tendency to increase rather than diminish, cerebellar abscess may be diagnosed confidently. Other cases may be doubtful, but this may be said with certainty that if the complete labyrinth operation has been done and nystagmus persist to the diseased side, there is an intracranial complication.[3] Baranay says: "Is the right vestibular apparatus unirritable, with a strong rotatory nystagmus to the right, so is the same caused by an intracranial disease." A dead labyrinth cannot originate a nystagmus toward its own side; therefore, the irritation must come from somewhere along the course of the vestibular nerve or its center.

The differential diagnosis between cerebellar abscess and meningitis of the posterior fossa cannot be made by means of the nystagmus. It is, in fact, usually difficult, though the other symptoms are the real guide and frequently do not fail us.

To those who wish to follow the subject more deeply Neumann's "Der Otitische Kleinhirnabszess" will be of great value.

DISCUSSION

Dr. William L. Ballenger said the average otologist was very much confused by the theoretical problems presented in a study of this question. As a matter of fact, there is one class of cases at least that can be diagnosed without knowing anything about nystagmus, as, for example, latent diffuse suppurative labyrinthitis, with total deafness and a history of a vertiginous attack at one time in the past—it may be weeks, months or years previously—and nystagmus might have been observed at that time. Since that time there has been total deafness and a discharging ear. Those cases are referred to as diffuse suppurative latent labyrinthitis. One might be able to make a diagnosis of a case of that sort even if he has not made a study of the deeper problems presented by Dr. Fletcher. It is easy for an otologist to know that he has a case of total destruction of the labyrinth. If we have, then, a case with a chronic discharge and the patient more or less deaf, the noise apparatus, the stream of water or the tuning-fork, as suggested by Dr. Pierce, inserted into the meatus, we can determine whether a patient has total destruction or not, and then, with a previous history of a vertiginous attack, we can arrive at a fair estimate that we have a case of diffuse suppurative latent labyrinthitis. So there is one type of case that may be fairly well diagnosed without the classical tests. Dr. Ballenger referred to a case under his observation at the present time of that type, which had been operated on ten or twelve years ago—three times within a period of a year or two—for mastoid disease. This man did not know he was totally deaf in the ear operated on, and the speaker did not know it until he had been around the office for two years. He had been treating him for frontal sinus disease, and had done an operation on him for it. One day he complained of dizziness, which aroused Dr. Ballenger's suspicions. He used the noise apparatus, and found him totally deaf in the operated ear.

So the problem is not so complicated as at first thought. It is true that these more theoretical aspects of the subject must be mastered before we have complete mastery of the subject, but it has been his desire to approach the subject from the simpler standpoint. He has seen nine labyrinth cases during the past year—most of them of the latent type, with a history of vertiginous attacks eight or ten years previously. Ruttin says that when the labyrinth has been long destroyed we may get complete compensation; that is, the nystagmus after the turning test is equal in either direction, though of shorter duration than in normal cases.

Dr. Norval H. Pierce said that Dr. Fletcher had presented the known facts that can be used in clinical work very well. He did not think he had anything to add. He carries out the examinations about as Dr. Fletcher does.

Dr. Robert Sonnenschein asked whether a Wassermann had been made in the case of the woman who had lost the reaction to turning, but still had the caloric. At a meeting of the Vienna Otological Society, held about two years ago, Neumann stated that the fact of loss of turning reaction and retention of caloric reaction almost suggests lues.

Dr. Fletcher said the woman had had an abdominal trouble for which she was operated on. Wassermann was made and was negative.

Dr. George E. Shambaugh stated that there is usually no difficulty in recognizing an involvement of the labyrinth in connection with suppurative middle ear disease. If the labyrinth involvement develops suddenly, there are symptoms of disturbed equilibrium, including nystagmus, which are always present. If the labyrinth involvement is one of long standing, especially where there has been a destructive process, the symptoms of disturbed equilibrium may be largely absent, but in these cases the labyrinth involvement can be diagnosed by the fact that the function of the labyrinth on that side is destroyed. In these cases of labyrinth involvement there may be some confusion in deciding on the proper treatment. Dr. Shambaugh thinks that the most important thing clinically is to determine when an operation on the labyrinth

2. H. Neumann: Zur Differential Diagnose von Kleinhirnabszess und Labyrintheiterung.

3. Physiologie und Pathologie (Functions-Prüfung) des Boyengang-Apparates beim Menschen.

is indicated and when it is not. In all cases of acute labyrinthitis where the disease stops short of a complete destruction of the function of the labyrinth, all are at present agreed that no operation on the labyrinth is called for. These cases are usually classified as cases of serous labyrinthitis and unless they develop into diffuse suppuration of the labyrinth the development of an intracranial complication is extremely unlikely. It is only in cases of diffuse suppuration of the labyrinth, where there is already a complete destruction of the labyrinth function, that the question of a labyrinth operation is at all considered. In view of the large number of cases which recover spontaneously after a diffuse suppuration of the labyrinth, the question naturally arises whether we are able to make a distinction clinically between the cases of diffuse suppuration of the labyrinth which call for a labyrinth operation and those in which a labyrinth operation may not be performed.

In examining cases where there has been a long-standing purulent otitis media one frequently discovers a totally dead labyrinth. It is not necessary to subject all of these cases to a labyrinth operation. It seems probable that only those cases of chronic, purulent otitis media, where the indications exist for a radical mastoid operation, that is, where there is an invasion of the temporal bone, with or without cholesteatoma formation, that the labyrinth operation should be performed. The question may not be so simple in cases where one observes in purulent otitis media the development of an acute labyrinth suppuration. There are some who believe that in all of these cases the labyrinth operation should be immediately performed. The speaker has not been able to subscribe completely to this opinion. He referred to a case that he had observed over a year ago who had what appeared clinically to be a mild acute otitis media with no severe pain and very slight rise in temperature. The patient recovered from a sudden destructive labyrinth involvement without an operation either on the mastoid or the labyrinth. Testing the ear one year later showed that there had been no return of function. In a similar way he had recently observed in a case of chronic purulent otitis media the sudden incomplete destruction of the vestibular part of the labyrinth. This case was not operated on. The type of the middle ear suppuration clearly indicated a process which had not invaded the temporal bone. There was no evidence of caries or cholesteatoma. There was a large, central perforation and a history of recurring acute exacerbation of middle ear inflammation running over a number of years. The patient made a good recovery, but there was no return of function to the semicircular canals. The speaker believes that in many cases of acute labyrinth destruction from suppuration one may defer an operation on the labyrinth awaiting the development of the first symptoms indicating an intracranial extension. Of course, in cases where the clinical conditions already indicate the necessity for a mastoid operation, whether these symptoms occur in a case of chronic or in a case of acute otitis media, the mastoid operation should be performed and at the same time the operation on the labyrinth should be done.

Dr. Ballenger did not think it was right to let Dr. Shambaugh's statement stand. He operated on a mastoid case several years ago and did a radical mastoid. The man had total deafness at that time—had diffuse suppurative labyrinthitis. The patient lived for five years in comparatively good health, but five years after the radical mastoid he died of meningitis. It is not safe to allow such cases to go without a radical labyrinth operation. Sooner or later meningitis or brain abscess is liable to occur. The labyrinth operation can do no harm, provided the operator knows the technic. We would not allow a chronic mastoiditis to go on indefinitely without operation, and there is infinitely more reason why we should not allow a labyrinth that is totally destroyed to go on indefinitely without operation, as intracranial complications are always liable to occur at any time. If operated, these cases are safe in that respect.

Dr. Shambaugh stated that in the case reported by Dr. Ballenger, where there was a long-standing destruction of the labyrinth, no labyrinth operation was called for unless the indications existed for a radical mastoid.

Dr. Joseph C. Beck said that the conservatism expressed by Dr. Shambaugh was certainly welcome, from a man who knew so much about the question as Dr. Shambaugh. He had seen such a case as the one referred to by Dr. Shambaugh as cured that developed a very severe labyrinthitis, with irritation of the dura, or meningeal irritation. He would certainly not operate on the labyrinth, but on the mastoid process.

Dr. Beck asked Dr. Fletcher whether, in the case of the man exhibited, with two fistulae, since this is an indication for operation, he would do bilateral radical operation in this case.

Dr. Shambaugh stated that in cases of acute otitis media where acute labyrinth symptoms developed, even when these symptoms indicated clearly a complete destruction of labyrinth function, he was not prepared to operate either on the mastoid or on the labyrinth unless indications were present for a mastoid operation or unless the patient developed symptoms indicating an intracranial extension.

Dr. Norval H. Pierce said that it is his custom, in cases of acute or chronic otitis media, in which acute labyrinthitis symptoms arise, never to operate on the mastoid for a simple mastoid or for a radical mastoid while those active symptoms are present, unless there are increasing meningeal symptoms. For proof of this he depends largely on lumbar puncture. He invariably allows these patients to remain in bed until all active symptoms have subsided, such as dizziness, vertigo, etc. In quite a series of cases he has not been disappointed in this method. Before adopting it, however, he was largely disappointed in the outcome of operations undertaken at the time of active labyrinthine irritation. He has seen fatal cases result from opening the labyrinth in the face of the active manifestations in the labyrinth, and he believes that we do not insure safety to the patient by simply opening the labyrinth. He believes that a given inflammation of sufficient virulence and clarity will proceed to the meningeal serous spaces, irrespective of whether we open the labyrinth or not. He, therefore, depends largely in these cases, while the labyrinth symptoms are in progress, on the chemical and cytological examinations of the cerebrospinal fluid. In the absence of changes in the cerebrospinal fluid the patient remains in bed at rest. They practically invariably recover from the active inflammation in the labyrinth, and then he proceeds with the radical operation, but very rarely feels called on to

open the labyrinth—very rarely. He thinks the terms serous labyrinthitis and suppurative labyrinthitis are misleading in a clinical sense. They have to do largely with the character of the inflammation, and you cannot always tell at the clinic whether it is a pure serous change or whether it is a suppurative change.

The point he wished to make is that he supports the position that we should not operate in the presence of a stormy, acute labyrinthitis, whether it is serous or not, whether there is a fistula or not, unless there are indications of advancing meningeal involvement. If there are such symptoms he would open the labyrinth and drain the subdural spaces. In a chronic otitis media with a quiescent, destroyed labyrinth and a demonstrable fistula or sequestrum, he would open the labyrinth.

Dr. J. Gordon Wilson said that he was sure the society appreciated the review given by Dr. Fletcher of the clinical applications of nystagmus. The rules given by Dr. Fletcher are of very great use. But one must recognize their limitations and desire more definite information. This, he fears, we are not likely to obtain in the first place from man. Here the conscious element is ever coming into play, modifying and sometimes making negative our findings. It has always appeared to him that we must look to the physiologist for the fundamental rules governing nystagmus.

The side of nystagmus that has interested him particularly has been the experimental. Here one sees that the fundamental facts of labyrinthine nystagmus are relatively simple. In discussing nystagmus one difficulty constantly met with is that we fail to recognize that we are referring to two different things, a slow deviation which is labyrinthine, the quick return which is extralabyrinthine. All our tests should have this in view. Thus he would rather that Dr. Fletcher spoke of the patient with labyrinthine disease falling in the direction of the slow movement of nystagmus. In man the falling in cerebellar lesions does not follow any such definite rule.

The careful observation of nystagmus in differential diagnosis is extremely important; for instance, in the differential diagnosis between cerebellar and labyrinthine disease. Here again the fundamental rules which will guide us must come from animal experimentation. For in man so many other influences may arise to complicate results. Thus in cerebellar abscesses, for instance, we have absorption of toxins, pressure on the vestibular nerve, etc. Let us aim to get the fundamental rules; then we can learn to eliminate the unessentials.

Dr. Fletcher, in closing, referred to Dr. Ballenger's remark that "we can so easily, without these tests, diagnose a latent suppurative labyrinthitis," and later said that "he was very much astonished after a long time that the patient had vertigo." That means that he never had acute labyrinthitis. He had serous labyrinthitis, because just exactly those cases recover, and the patients can again have symptoms of circumscribed labyrinthitis, such as attacks of vertigo.

Dr. Lewy asked about the action on acute suppurative otitis media in which there was a fistula present. The speaker was sure, from his own personal experience, that he could not answer this question, because he had never seen a case of acute suppurative otitis media where there was a fistula present. He had seen labyrinth symptoms and vertigo, but had never been able to demonstrate a fistula in an acute case.

Dr. Shambaugh asked himself the question, Shall we operate when there is complete suppression of function? and determined that he would not. Then he referred to the case of the essayist as being a case of suppurative labyrinthitis. He would first speak about the operation.

Abroad, where they are trying to accomplish something, they maintain that we should operate, because it reduces the death rate. They have their statistics of many years' standing in which they did not operate on labyrinth cases, or very rarely. They did not recognize them—they did not know of symptoms that we now speak of as nystagmus and its accompanying symptoms. Dr. Fletcher's opinion is largely their opinion. He is inclined to follow them. What he saw when over there impressed him very much, and what he has seen since returning from there seems to agree with their statistics. The death rate is distinctly lower by operating during the stormy process; in other words, operate on a case that has been diagnosed with certainty as diffuse suppurative labyrinthitis. Barany and all say do not operate when it is serous. Sometimes they get brain symptoms. That is, the symptoms lead them to think that there may be a brain abscess. They operate on the labyrinth, and remove it as much as possible, and await results.

With the experience in Europe with a number of cases of serous labyrinthitis following operation, and with the fact that there is no pus coming from the fistula just now, he is inclined to think that the case is one of serous labyrinthitis rather than suppurative. He has not opened the labyrinth. In other words, while he follows the Vienna school, he also follows his own judgment somewhat. In this case he has seen no indications for an operation. He would not operate on a labyrinth because it was dead. That is a certainty.

The Vienna men say that we should operate on cases of diffuse suppurative labyrinthitis, because of the great frequency of the occurrence of meningitis and brain abscess in cases not operated on, and also because they consider the disease more dangerous than the operation. They, on the contrary, consider the operation more dangerous than letting the disease alone, providing you do not do the complete operation. Merely opening into the labyrinth is not the labyrinth operation. They consider, then, the trauma which has been done to the labyrinth infinitely more dangerous than doing nothing, unless you open all three semicircular canals, the vestibule and the cochlea. (The Numann operation.)

Dr. Beck asked about the other case, and that he has not operated on or suggested it. The Vienna school does not approve of that. Barany especially says to beware of an operation on one ear when the other one is diseased; in other words, he says, you take a chance. This man's hearing is very good. If on either side he should develop very strong symptoms, he certainly would operate—if those symptoms were not serous. If he develops a storm and has any hearing left, or if he responds to turning or to the caloric test in the ear which produces the storm, he would still not operate. But on the first sign of developing intracranial symptoms he would operate.

Dr. Pierce asked if he would operate in case of intracranial symptoms, whether there was function or not, to which Dr. Fletcher replied, yes, whether there is function or not.

Replying to Dr. Wilson's remarks on the nomenclature—Barany objects to that sort of thing. This has been discussed a good deal abroad, and they think they had better retain the present nomenclature, although the speaker quite agreed with Dr. Wilson that it would be very much better to speak of vestibular component.

DOUGLAS COUNTY

The Douglas County Medical Society held their bimonthly meeting at Patterson Springs Chautauqua Grounds, Camargo, July 18, at 2 p. m. All physicians, dentists, attorneys, ministers and editors and their wives of the county were invited. About two hundred were present and all expressed their desire to have this meeting an annual affair, whereby closer relationship might be fostered between the physicians and the members of other learned professions.

The following was the program for the afternoon: Our Visitors, or Why this Meeting, Dr. Phillip Herron, Villa Grove; Some Facts Along the Highway of History, Dr. J. L. Reat, Tuscola; Music by mixed quintette; Some Points on Establishing a County Hospital, Dr. W. S. Martin, Tuscola; Hereditary Environments, Rev. C. D. Henry, Newman; Where the Physician and Minister Join Hands, Rev. North, Arcola; Music: Lincoln Quartette, Tuscola; Eugenics, Prof. E. E. Gere, Co. Supt. Schools, Tuscola; Medical Economics, W. Thomas Coleman, state's attorney, Douglas County; The Relation of the Dental to the Medical Profession, Dr. Kennedy, D.D.S., Villa Grove; Oral Hygiene, Dr. Damron, Arcola.

WALTER C. BLAINE, Secretary.

EDGAR COUNTY

The Edgar County Medical Society met in regular quarterly session in the Odd Fellows' Hall, Chrisman, Ill., at 2 p. m., July 30, 1913, with Dr. W. S. Jones, the president, in the chair. The minutes of the last regular and called meetings were read and approved. The following physicians were elected to membership: F. M. Link, Paris; Harry Lycan, Vermilion; R. H. McKnight, Kansas; W. R. Apple, Paris; D. W. Frantz, Metcalf; O. R. Scott, Chrisman; J. F. Jennings, Scotland; J. L. Funkhouser, Chrisman; C. A. Handley, Brocton; J. O. White, Brocton; J. W. Martin, Oliver; F. E. Shipman, Paris, and William Halloran, Paris.

The regular program was then taken up, beginning with a round table talk on "Gravel, from the Standpoint of the Motorist." This table talk was really a discussion on the subject of good roads and was participated in by nearly every member present. Dr. T. C. McCord described some of the great highways of Europe, particularly those of Italy, Switzerland and England. The structure of these roads and their durability was fully considered, and the adaptability to the conditions of Illinois was fully gone into. Dr. J. O. White described the road making methods of Kentucky. Dr. Z. T. Baum described the methods adopted in Indiana. Dr. Roland Hazen the concrete roads of Long Island, N. Y. The different members then detailed the methods employed in Illinois. The discussion was very earnest, the doctors recognizing the great importance of the subject and the necessity for urging legislation on the same. The concensus of opinion was that in Edgar county the brick pavement had proved the best of all methods tried. The members agreed to urge on the authorities the continuation of the work already so well begun.

"Gravel from the Medical Standpoint" was then taken up and the table talk on this subject was very interesting and instructive. Dr. Hazen took up the subject of "Calculi of the Gall-Bladder and Ducts" and presented a number of gall-bladders and biliary calculi to illustrate his discourse. He called special attention to the fact that in many cases pain was not a good criterion as to the gravity of the case, stating that to have strong spasms it was necessary to have a strong musculature to contract on the offending mass; and that with gall-bladder walls thinned and weakened, strong contractions were impossible: further, that many cases of disease which imperatively demanded operative measures gave a history of but little pain or spasm. Dr. Hazen also uttered a warning against awaiting for gall-stones to appear in the stools before determining the diagnosis and proceeding to operate. If the calculus was larger than the caliber of the ducts it could not pass, and if the walls of the gall-bladder were thin and weak the severe pain would not be present. In waiting for these symptoms to appear there was great danger of perforation and infection. Both the points were made clear by specimens illustrating the conditions under discussion. Dr. Baum called attention to the enormous number of calculi sometimes found in the gall-bladder. Dr. H. C. Kerrick spoke of the type and shape of the urinary calculi in relation to pain in passing through the ureter.

Dr. B. G. R. Williams spoke on the composition of the various calculi of the gall-bladder, kidney and urinary bladder. Dr. G. W. Hunt spoke of the very rapid development in size of urinary calculi and cited some cases he had seen. Dr. C. A. Handley had had a similar experience. Dr. McCord spoke of indigestion as the cause of calculi and predicted that the time would come when this would be proved to be the cause of all types of this ailment. Others called attention to infection as a cause of calculi.

The president, Dr. W. S. Jones, then made an address in which he urged physicians to develop to the utmost the fraternal principle. He also pictured very elaborately the benefits of the medical societies and the great value of well attended meetings. He also spoke of the greater interest which would be developed should the society meetings be held at different points throughout the county instead of always holding the sessions in one city. He then detailed his experiences with the dierotalin vaccines and reported several cases in which he had successfully employed them, and concluded by urging their trial in epilepsy, asthma and rheumatism.

The president appointed Drs. Hunt, H. C. Kerrick, Evinger, Williams and Baum as a committee to confer with the National Red Cross Society in regard to forming a branch of that society for Edgar county.

The members of the Society made a visit to the home of Dr. D. M. Camerer of Chrisman to congratulate him on having reached his eighty-ninth birthday. Dr. Camerer is thought to be the oldest living graduate of Rush Medical College and is enjoying a happy and vigorous old age, esteemed by all who know him. He is regarded as the medical nestor of the Edgar county physicians.

The following physicians were present: Jones, Baum, White, Harlan, McCord, Halloran Hazen, Williams,

Layton, Buchanan, Chas. Kerrick, H. C. Kerrick, Shipman, Slaughter, Handley and Hunt.

The Society adjourned to meet in Brocton October 29 1913.

GEORGE H. HUNT, M.D., Secretary.

GALLATIN COUNTY

At the stated meeting of the Gallatin County Medical Society held in Shawneetown in May last, the following officers were elected for the ensuing year: President, Dr. J. W. Bowling, Shawneetown; vice-president, Dr. W. H. Gregory, Cave in Rock; secretary, Dr. A. B. Chapel, Shawneetown.

J. W. BOWLING, M.D., President.

KANE COUNTY AND AUX PLAINES BRANCH

The annual midsummer joint meeting of the Kane County Medical Society with the Aux Plaines Branch of the Chicago Medical Society was held August 7 at the Glen Oaks Country Club. Lunch was served at the club and the afternoon devoted to the scientific program as follows:

"Relation of the Eyes to Diseases of the Nose and Accessory Sinuses." Lawrence J. Hughes, Elgin. Discussion opened by Drs. Kettlestrings and Schneider.

"Open Treatment of Fractures." James H. Skiles, Oak Park.

"Arthritis." Gilbert L. Bailey, Oak Park.

"Some New Things in Surgery Observed at Johns Hopkins Hospital." D. D. Culver, Aurora.

WILLARD W. WICKSON, Secretary.

McHENRY COUNTY

The McHenry County Medical Society met in the city hall at Marengo, Aug. 9, 1913, at 5:30 p. m., with the president, Dr. H. D. Hull, in the chair and the following members present: Drs. Brown, Hebron; Peck, Maxon and Schmid, Harvard; Hull, Crystal Lake; Pillinger, Algonquin; Higgins, Huntley; Eshbaugh, Richardson and J. I. Wernham, Marengo; West, Seelye and Smith, Woodstock.

The application of Dr. George H. Pflueger of Crystal Lake having been reported on favorably by the board of censors, a vote was taken and Dr. Pflueger declared duly elected to membership.

Dr. O. L. Pelton of Elgin then read a very interesting paper on "A Few Surgical Diseases of the Pleura."

A motion was made and carried that the next, or annual meeting of the society, be held at Algonquin at the call of the president.

Adjournment was then taken to the supper table.

A. B. SMITH, M.D., Secretary.

MONTGOMERY COUNTY

Regular June Meeting

Our June meeting was one of the best of the year both in attendance and in excellence of the program. Dr. F. C. Blackwelder's paper on "The Salicylates" was a splendid effort and it brought out a generous discussion. The paper was complete, comprehensive and practical and we regret that we are unable to publish it in toto for the benefit of those who missed it.

The society decided to hold the picnic again this year and selected the date of the regular September meeting as the time. Chautauqua Park was again chosen as the place. A committee consisting of Z. V. Kimball, L. S. Brown, M. W. Snell and H. F. Bennett was appointed by the president to make the necessary arrangements for the picnic.

Dr. H. C. Hopper of Nokomis, a graduate of Jefferson Medical College, was elected to membership.

Messrs. Frey and Bixler, of Hillsboro, were guests of the society and at the conclusion of the program both made short talks. They were loud in their praise of our organization and predicted splendid things for its future.

The program committee announced that the next meeting of the society would be held at Nokomis and that Dr. L. S. Brown would be the essayist and Dr. W. H. Mercer to lead the discussion.

The following were in attendance: Drs. Kelly, Lockhart, Burns, Hager, Snell, Blackwelder, F. C. Sihler, G. A. Sihler, Jr., Allen, L. G. Griswold, Whitten, Hodges, Hopper, Hubbard, Brown, Hermann, Moyer, Kimball, Clotfelter and H. F. Bennett.

Regular Meeting of July 29, 1913

The last meeting of the society was held in Nokomis on the above date, with Vice-President Whitten in the chair and the following present: E. A. Burwell, M. H. Irwin, H. C. Hopper, W. C. Hovey, W. A. Hodges, G. C. Bullington, C. H. Lockhart, W. I. Burns, R. N. Canaday, I. G. Hubbard, F. W. Barry, H. C. Turney, M. L. Moyer, L. S. Brown, Z. V. Kimball, E. H. Hermann, A. W. Lindberg and H. F. Bennett.

The committee on arrangements for the picnic reported progress and promise splendid entertainment for this occasion.

Dr. L. S. Brown read a paper on "Punctures" which was most instructive. A general discussion lasting more than an hour followed, Dr. Brown closing the discussion.

The Nokomis members entertained the society with an informal luncheon following the meeting.

PIKE COUNTY

The regular July meeting of the Pike County Medical Society was held Thursday, July 31, 1913, in Woodman's Hall at Griggsville. Members present were Drs. Shastid, Lacy, Harvey, Smith, Wells, Skinner, Peacock, Watson, Loveless and Duffield; visitors, Drs. E. J. Brown, Decatur; C. E. Black, Jacksonville, and J. W. Turner, Pleasant Hill. Dr. Turner requested a rehearing of his case which ended by his making a new and original application for membership to be acted on at the next regular meeting. After the usual business preliminaries, Dr. Everett J. Brown read a paper on "Chlorosis and Pernicious Anemia" which was thoroughly discussed. Dr. W. E. Shastid reported a case of anterior poliomyelitis in a girl, aged 15 years, which ran a rapid course of a few days to death. This was thoroughly discussed and brought out reports of several milder cases in younger children but no deaths. Dr. C. E. Black reported a case of extensive injury to the head which finally ended in a test of the employer's liability law, which he commented on extensively. General discussions on various topics followed. Drs. Brown and Black were tendered a vote of thanks for their assistance in the program. H. T. DUFFIELD, M.D., Secretary.

RANDOLPH COUNTY

The Randolph County Medical Society met in regular quarterly session in Sparta at the Country Club, Thursday, July 24, 1913. The following members were present: Drs. H. L. Gault, J. W. Wier, Wm. R. MacKenzie, W. H. James, C. H. Anderson, Harley Yandall and L. J. Smith. Drs. E. W. Fiegenbaum, secretary of the Madison County Medical Society, Edwardsville, and W. U. Kennedy of St. Louis were present and had interesting papers. The program was excellent and an elaborate lunch was served by the ladies who were especially invited to this meeting. The next meeting will be held in Chester the second Tuesday in October.

LOUIS J. SMITH, Secretary.

VERMILION COUNTY

The annual picnic of the Vermilion County Medical Society was held in Barlow Park, Alvin, Ill., Aug. 8, 1913. Among the afterdinner speakers, Mrs. F. M. Mason of Rossville deserves special mention. Her response to the toast "The Doctor's Wife" follows:

"*Mr. Toastmaster, Members of the Vermilion County Medical Society, Ladies and Gentlemen:*—I desire to congratulate the committee on the arrangement whereby for the first time in its history this society has found it possible to enjoy to-day's outing with a splendid picnic dinner and delightful social intercourse in this beautiful park. Especially have we been pleased to listen to the responses to the various toasts and the felicitous manner in which each subject was presented, and I suggest that this day be made the inaugural of a custom to be perpetuated through this generation at least.

Permit me also to express the honor that I feel has been conferred on me in being requested to respond to a toast and particularly that of 'The Doctor's Wife.' The blood of the medical profession for five generations courses through my veins. In my girlhood I used to feel that when the choice of a life partner presented itself to me, I would certainly refrain from choosing an M.D., but how little we know of the fortitude necessary to meet the almost irresistible influence of heredity, for I find myself not only the daughter of a doctor through long descent, the sister of a lamented physician and surgeon, but the wife and probable mother of a doctor.

"When the announcement of my subject reached me, somehow or other the wife of the present day seemed to pass from me, and I saw the doctor's wife of pioneer days, whose duties were more strenuous, whose cares less unrelieved, and whose efforts were more unappreciated. I seem to behold, even as St. John on the Isle of Patmos, a vast multitude, whom no man could number, of all nations and kindreds and peoples and tongues, who stood before the throne clothed in white robes and palms in their hands: and I beheld those who had come up out of great tribulation, and I said surely these are the doctor's wives, surely these are the faithful consorts of the pioneer, who braving the discomforts of primitive civilization, accompanied the doctor in his efforts to aid humanity, to relieve distress, to comfort the afflicted and to make of himself a veritable martyr to inherited principles of right. Undaunted she took up the burdens willingly assumed, unflinchingly she endured the chafing load, and resignedly she accepted the fate which awaited her future life. Ready to minister to all, her hand was outstretched in mercy, her ear was ever open to every call of distress.

"Meager as were the financial remunerations of those days, she often found herself wondering how to maintain the home and rear the family on the small pittance available at that time. Yet bravely she endured all as one who sees not the present, her bosom the haven of her husband's faith, the comfort of her children's ills, the refuge of her neighbor's woes. She kept inviolate the secrets of each and saw only the promise of her high calling in the infinite and beautific reward awaiting her. She was indeed a part of every case whose intricacies baffled the skill of the doctor, or whose recovery gladdened his heart. She was in every sense a helpmeet even as she was divinely intended to be. Many were the medicinal compounds prepared by her hands, many the surgical appliances attended by her, and many were the critical moments in the history of the case the patient hovering between life and death, when she stood bravely by the side of the doctor and cheered by her presence or consoled by her advice.

"A noble woman, the pioneer doctor's wife: unexcelled in integrity, unsurpassed in nobility. Her price was above rubies. The heart of her husband did safely trust in her, and she did him good and not evil all the days of his life. Fain would I weave for her a crown of immortal fame, and tenderly placing it on her brow, with a heart full of a sense of personal indebtedness make a loving and reverened obeisance to her memory. To what extent her example is followed to-day remains a question for future solution. Innate modesty and propriety forbids a personal reply. However distance, you know, reveals much that cannot be seen at close range, and possibly the future will make clear the noble qualities of heart, head and mind which make up an ideal doctor's wife.

"The tide of progress, the school of men's thought, and the achievement of scientific research have done much to lessen the responsibilities and to lighten the duties of doctors' wives: while the 'New Woman' idea and the many promising possibilities which hover on the ever broadening horizon of equality for the sexes, make pause and wonder as to what extent, to what degree, she may participate in these movements. It appears to me that in no place is a woman more eminently in her God given sphere than in the home. Here she exercises her own peculiar privileges and rights, here she molds and fashions the lives entrusted to her care, here her influence makes her impressions that shall last until the ethereal blue of the great eternity beyond dawns on us.

"And now you will pardon the digression, as in conclusion I cannot refrain from commenting on the professed tolerance of conservative thought, which fosters a growing indifference to the attempts made by the isms, quackeries, and hoodoos of the charlatan to lower the standard of the medical profession. I would exhort all to vigilance that the honors and dignity attained and upheld by some of the grandest men this age or any other age has ever produced, men who considered emoluments and honors as naught compared to the lasting good bestowed on future generations by their wonderful achievements in medicine and surgery, be not lowered by the excrescences that attempt to fasten themselves on the medical profession. Let us be true to the teachings of these noble men who have made the whole human race debtors to

their excellent greatness forever. Peace to their ashes. They have left us a priceless legacy.

"And now I propose a toast to 'The Doctor's Wife.' Long may she live to enjoy the happy fruition of a well ordered life. Long may her memory be cherished. And further to the doctors, I propose the future maintenance of the high degree of medical and surgical excellence attained by the profession in Vermilion county. I thank you."

News Notes

—One thousand new members will place the Illinois State Medical Society at the head of all the states.

—Mellin's Food is said to have been awarded the Gold Medal at the International Medical Congress in London.

—Tear out the application blank—advertising page—and secure a new member for the next meeting of your society. There's a reason—on reverse page.

—An analytical laboratory for the coroner's office has been opened in the County Building and work has been commenced by the coroner's chemist, Dr. William D. McNally.

—Maimonides Hospital, 1519 South California Avenue, opened its free dispensary to the public, July 28. It is said to be the only orthodox Jewish institution of its kind in the West.

—Bids for eight cottages for the tuberculosis department of Oak Forest Infirmary were received by the Cook County Board of Commissioners August 4. The bids varied from $112,800 to $142,984.

—At the July meeting of the Edgar County Medical Society new members representing Paris, Kansas and Scotland were elected. Is this an international society masquerading under the modest name of Edgar County?

—The first jury of women ever impanelled in Cook County passed on insane cases at the Detention Hospital Court, August 7. Dr. Clara P. Seippel, assistant city physician, was foreman of the jury and Dr. Anna Dwyer a member.

—Cass County Association for the Prevention of Tuberculosis was organized at Virginia, July 30, with Drs. Albert R. Lyles, Virginia; John G. Franken, Chandlerville; Jos. M. Swope, Arenzville, and Jas. A. Glenn, Ashland, vice-presidents.

—At a meeting of the board of trustees of the Watseka Hospital, July 30, A. F. Goodyear was elected president of the board and a committee was appointed to investigate building plans and have the construction of the hospital carried on as rapidly as possible.

—At a recent meeting of the Douglas County Medical Society a movement was started to build a county hospital. The plan is to solicit subscriptions to the amount of about $25,000 among the residents of the county, and with this amount to establish a hospital at Tuscola.

—We are in receipt of a booklet on "Biologic Products and How to Use Them," issued by the Abbott Alkaloidal Company and offered free to any of our readers on application to the company direct. This little booklet contains in compact form much valuable information on the preparation and use of these products.

—A massmeeting was held at the Kishwaukee Country Club under the auspices of the De Kalb County Medical Association to inaugurate measures for the establishment of a county sanatorium for tuberculosis. Dr. W. A. Evans, Chicago, delivered the address and steps were taken for the organization of a society to take the matter in charge.

—Plans have been executed and contracts are being awarded for a new contagious hospital to be built in Evanston by James A. Patten. Mr. Patten offered to build such a hospital if $100,000 should be subscribed by citizens of the town as an endowment fund. The building is to be four stories in height, the upper stories being devoted to hospital wards.

—Mrs. John B. Murphy, treasurer of the Free Bed Fund of the Chicago Hospital Aid Association, in her report of the subscriptions and contributions made in May last, for the benefit of the hospital fund, states that $25,000 was collected, that nearly $9,000 is being held at the State Bank of Chicago for a contagious disease hospital and research fund when the institution will be established; $8,833.33 has been received for the Chicago Baptist Hospital and a similar amount has been expended for the sick poor in various hospitals, and that a balance of $7,558,59 is still in the hands of the association awaiting distribution.

—Eugenics and race suicide seem to be getting into politics in Germany. According to current dispatches, a Dr. Moses defends the "birth strike," claiming that it would be the quickest, most effectual and most certain way of raising the status of the working classes. He told of attending working mothers who had fifteen to eighteen children, while families of ten or twelve children were numerous. He said that, leaving out of consideration the physical ruin of mothers, no workingman could even half way rear, feed and educate such a number of children under present conditions.

—*The Journal A. M. A.* for August 23 contains the annual report on "Medical Education in the United States" with the customary encyclopedic data on medical colleges. Whatever the partisans of various schools may think of the facts as therein set forth, the thoroughness of this presentation has never been approached by any other investigating bodies of which there has been a surfeit the past few years. If anyone feels chagrined at the record of his alma mater, let him not be downcast. His school may join the ranks of those that have seen the handwriting on the wall and given up the unequal struggle or joined with others to form a strong institution.

—The Clinton County Medical Society issued the first number of *The Messenger* last month containing the names of the members and new officers, announcement of the program of the meeting of August 12, some personals and news items and the following "Things that Concern All": (1) What have you done and what are you doing for the society? (2) There is much work to be done, will you help? (3) We should have every eligible physician in the county enrolled as a member. (4) We should do something to benefit each and every member. (5) What do you think of the changed appearance of the ILLINOIS MEDICAL JOURNAL? Out with it. Don't be embarrassed. The *Messenger* is a live one and will no doubt add greatly to the interest of the members and increase the attendance at the quarterly meetings. There is a field for many more publications by the county societies.

Personals

Dr. and Mrs. David Monash, Chicago, have returned from abroad.

Dr. George Thomas Palmer, superintendent of health of Springfield, has resigned.

Dr. Anna Dwyer, Chicago, has been appointed a member of the State Charities Commission.

Dr. A. T. Davis, St. Charles, was operated on for appendicitis in St. Joseph's Hospital, Elgin, July 24.

Dr. T. H. Culhane, Rockford, has been appointed a member of the State Civil Service Commission.

Dr. E. P. Murdock, Chicago, recently fractured his leg in the fall of an aeroplane near Spokane, Wash.

Dr. Thomas H. Leonard, Lincoln, has been appointed superintendent of the Lincoln State School and Colony.

Dr. John J. Grant, after three years in hospital work in New York, has returned to Freeport and will locate there.

Dr. J. E. Inskeep, Mount Carmel, announces that he intends to retire from active practice to establish business in the West.

Dr. F. M. Mason and family, Rossville, report a pleasant auto trip of 2,300 miles to Niagara Falls and return without accident.

Dr. Patrick M. Kelly, Litchfield, has been appointed superintendent of the Kankakee State Hospital, vice Dr. Sidney D. Wilgus, resigned.

Dr. Stewart C. Thompson, Byron, was painfully injured in a collision between his automobile and a St. Paul freight train, July 23, in Byron.

Dr. Ralph Kleckner, Mattoon, has returned from a year of study in Vienna and will locate in Springfield, Ohio, confining his practice to surgery.

Dr. W. L. Athon, formerly superintendent of the Anna State Hospital, will devote his entire time to the Marshall City Bank, of which he is president.

Dr. H. G. Hardt resigned as superintendent of the Lincoln State School and Colony, to take effect August 10, 1913. Dr. Hardt will locate in Chicago.

Dr. Peter C. Clemenson, Chicago, has been appointed a member of the Board of Education and Dr. Frank J. Pokorney a member of the Library Board.

As the August JOURNAL was in press, news was received of the death, July 20, at his home in Oconee, of Dr. James Linn, whose great age was commented on in THE JOURNAL.

Dr. E. E. Church, formerly of La Fayette, Ill., spent a year in Oklahoma to regain his health and has purchased the home and practice of Dr. R. L. Buffum of Toulon, who is going to California.

Dr. John F. Taylor, Buda, who suffered from sunstroke while driving his automobile near Buda, lost control of his car which was wrecked, and in the wreck Dr. Taylor sustained serious injuries.

Dr. A. M. Harvey, Chairman of the Public Policy Committee of the Illinois State Medical Society, formerly of 33 S. Ashland Boulevard, Chicago, has removed his residence to 345 N. Spring Avenue, La Grange.

Dr. George G. Davis, instructor in surgery at Rush Medical College, has obtained leave of absence for one year and sailed for Manila, August 12, where he will serve as associate professor of surgery in the University of the Philippines.

Dr. F. A. Lausman, whose death is noted in this issue of THE JOURNAL, requested us to announce the severance of his connection with the Chicago Hospital College of Medicine, the request coming too late for insertion in the August JOURNAL. Requiescat in pace.

Dr. John E. Allaben, Rockford; Dr. and Mrs. R. H. Good, River Forest; Dr. J. F. Percy, Galesburg; Dr. Geo. M. Kreider, Springfield; Dr. Carroll B. Welton and family, Peoria; Dr. and Mrs. Chas. J. Swan, Evanston, and Dr. J. A. Pratt, Aurora, have sailed for Europe.

Dr. Maximilian Herzog has been appointed dean of Bennett Medical College and head of the department of pathology, bacteriology and hygiene; Dr. Charles H. Miller has been made head of the department of therapeutics and Dr. Ulysses J. Grim, professor of otology and laryngology.

Dr. and Mrs. Herman L. Kretschmer, Dr. and Mrs. Joseph Krost, Dr. and Mrs. Cassius C. Rogers, Dr. and Mrs. Frank C. Todd, and Drs. Robert Sonnenschein, Julius B. Beck, John J. Killeen, Oliver S. Ormsby, William Allen Pusey and Anthony Krygowski, all of Chicago, have sailed for Europe.

Dr. Frank P. Norbury, alienist, Board of Administration of Illinois, has resigned; effective October 1, 1913. Dr. Norbury will enter on consulting practice at Springfield. Dr. Norbury entered public service as assistant physician to the Jacksonville State Hospital, 1888-1893; then followed private institution work for sixteen years. Governor Deneen appointed him superintendent of the State Hospital at Kankakee and later alienist member of the Board of Administration.

Eminent labor in any field of human endeavor ultimately finds its reward. The appointment of our President, Dr. P. M. Kelly, as the executive head of the State Hospital for the Insane at Kankakee is a recognition of that merit. He has been faithfully devoted to the highest ideals of his profession for more than twenty years. While his departure into another field causes the deepest regret to a legion of friends and admirers, they all rejoice in the honor conferred on him. Our society has sustained a decided loss in the change that takes Dr. Kelly from Montgomery County. He has always been an ardent supporter of medical organization and the growth of our society has been due greatly to his enthusiasm and wise counsel. In medical circles he is universally held in the highest esteem. His ability, sincerity and integrity are irreproachable. If intelligent and honest hard work count for anything, his administration will be most successful. The Montgomery County Medical Society joins in the multitude of congratulations and best wishes.—*From the Bulletin of the Montgomery County Medical Society.*

Public Health

—The British Medical Association is said to have seriously discused the advisability of organizing a labor union to escape the liability of having its funds attached for libel. Labor unions' funds are thus exempt, but the *British Medical Journal* was mulcted for calling a practitioner a quack. The association was also defeated in its fight against the provisions of the new pauperizing insurance laws. Those members who favored the "union" idea argued that it would help the association in such public contests.

—On examining the August announcement of the Fourth International Congress on School Hygiene giving the second tentative schedule of papers, one is surprised at the very small representation of the medical profession of Illinois. Only two physicians from the state, Drs. Frank Allport and Josephine E. Young, Chicago, have papers on this program, while the educational forces of the state have six and the nurses one representative. It is also noteworthy that none of the middle western states has a representative on the international committee.

—Many communities are afflicted with medical fakers because no one takes the initiative in suppressing frauds of this character. Members of the medical profession are sometimes loath to do so because of the belief that the public will misconstrue their motives. In most instances the civil authorities have been indifferent. And so these frauds flourish.

San Antonio, possibly because of its reputation as a health resort, has been a fertile field for medical frauds of all sorts, but through the action of the Bexar County Medical Society has been almost completely rid of such people. Texas has a medical practice law which differs little from the practice laws of many other states, but under the vigorous action of the legislative committee of the county society headed by Dr. Charles D. Dixon, chairman, assisted by their attorney, Mr. J. I. Kercheville, regularly employed by the committee, practically all of these people have been driven out of the community. Only three firms of advertising specialists remain, and against the men composing these firms charges have been filed for the revocation of their licenses.

The action of the legislative committee of the Bexar County Medical Society who are ridding the community of these frauds shows what can be done in practically every state, under present medical practice laws, if the matter is taken up in a vigorous manner. Physicians of the state of Texas are interested in the work of the Bexar County Medical Society, and similar action will doubtless be taken in other communities. When rightly understood, similar action by the medical societies in every state will be approved by the people.—*From Jour. A. M. A.*

—Oscar Sprohl, because of the great success he attained, has had many imitators. One of these, also styling himself the Great Keene, a few weeks ago was working the good towns of Illinois. I was his assistant. This fellow's name is C. Mason Johnson Hugoros, but he also is known as J. R. Silver. We'll call him Silver.

He carries an electric battery around the country, hires a suite of rooms in a hotel, and advertises he will cure any ailment or make no charge. This battery is placed in a closet, a wire run under the carpet to his desk, and he makes the connection by means of placing his foot on a small plug.

When a sucker comes in Silver finds out what his trouble is. He then holds out his hands and says: "Now, place your hands on mine and I will show you that I am a magnetic man." Hidden in the closet, I get my signal. I turn the battery on just a little and give the goop a slight shock.

Silver makes a specialty of curing rheumatism Electricity is one of the greatest known remedies for temporary relief from that ailment. Silver rubs the sucker thoroughly with the palm of his hand.

One day I had been drinking pretty heavily, and while I was secreted in the closet awaiting the arrival of a live one I fell asleep. While I was in dreamland a sucker came in. Silver, giving me the signal, said: "I am a magnetic man." He repeated it several times louder and louder. I awoke with a start, and, in my hurry to answer the signal, turned the battery on to its highest voltage. Silver let out a howl that would wake the dead. The sucker went downstairs and reported the fake to the hotel manager. He came upstairs and discovered the battery. Silver kicked me in the eye while I sat in the closet. We made our getaway. The authorities, according to late reports, still are searching for Silver. —*From Thos. J. Minnock, Confessions of a Reformed Grafter, Chicago Tribune.*

—Dr. W. A. Evans, health commissioner for the Chicago *Tribune*, in his "How to Keep Well" article, August 19, indulges in some reflections on baby welfare work with regrets that Chicago and other cities were wont to work out their own methods in such work instead of adopting out of hand the improved methods of the more experienced, as for instance, the New York health department, which employed a staff of physicians in 1876 to care for sick babies in July and August. As commissioner of health for Chicago, Dr. Evans was the first to secure funds to employ the school physicians during the summer of 1908 in infant welfare work, but the inference that such work had never previously been done in Chicago is incorrect.

In 1899 the city had the free services of seventy-five volunteer physicians who called on the mothers in the poorer parts of the city instructing them in the care of the babies. As their unsolicited visits were sometimes viewed with suspicion, the corps were instructed to introduce themselves by inquiring about the removal of garbage which gave them a sympathetic hearing when they approached the question of infant feeding and care.

July 29, 1899, Dr. A. R. Reynolds, then commissioner, said: "It is discreditable to the city and unjust to the medical profession which already gives so freely of its time and talents to charitable work, that physicians should be asked to do without compensation what it is the city's duty to do in the interest of the public health; and I shall renew my request next year for a midsummer corps of properly paid medical inspectors, such as New York and other cities have long had."

Even earlier, in June, 1895, Dr. F. W. Reilly, assistant commissioner of health, wrote a pamphlet or folder on "Hot-Weather Care of Infants and Young Children" that was printed in six languages and remained the standard in the Chicago Department of Health till 1911. It passed through fifteen large editions and was translated into three additional languages. It has been the basis of numerous similar circulars in the United States and abroad.

The following figures speak eloquently for the faithful efforts of the volunteer or very small paid corps of physicians employed previous to 1908, though the paid staff in 1911 and 1912 again lowered the higher death-rate that prevailed in 1907-10.

DEATHS UNDER 1 YEAR OF AGE

	Per cent. of total deaths at all ages	Per 1,000 population all ages
1902	19.44	2.86
1903	18.39	2.87
1904	19.10	2.64
1905-6 (average)	21.24	3.03
1907-10 (average)	21.15	3.16
1911	19.31	2.81
1912	19.73	2.92

Dr. Whalen asked for 100 medical school inspectors in 1906, but was unable to secure an appropriation for them until February, 1907, when an epidemic of scarlet fever aroused the council to provide a corps of 200, which was reduced to 100 after the epidemic subsided, and this has been the average number employed since that time. No consideration of infant welfare work would be adequate without mentioning the excellent services of the Visiting Nurse Association and the corps of health department nurses. The visiting nurses began the instruction of mothers in 1891-2. The first baby tent in Chicago was established in 1905 at the Northwestern University Settlement. This year thirteen tents are in use. In 1908 forty health department nurses were detailed to welfare work under the Visiting Nurse Association. The past summer the health department has employed 75 nurses.

Marriages

JOSEPH LOUIS BAER, M.D., to Miss Gretchen W. Shattuck, both of Chicago, July 28.

EDWARD FRANK GOLLOBITH, M.D., to Miss Ida Eadle, both of Hanover, Ill., June 26.

EDWARD S. LOGÉ, M.D., to Miss Anna Soukup, both of Milwaukee, at Chicago, July 12.

JOHN ABRAHAM PRATT, M.D., to Mrs. Harriet M. Bigler, both of Aurora, Ill., July 21.

ALVAH LEWIS SAWYER, M.D., Chicago, to Miss Marion L. Messer of Beloit, Wis., June 21.

BEVERIDGE HARSHAW MOORE, M.D., to Miss Amy Thayer Blodgett, both of Chicago, July 22.

WILLIAM HARRY CUNNINGHAM, M.D., to Miss Emma B. Eckholm, both of Rockford, Ill., July 22.

LYMAN GOULD, M.D., Chicago, to Miss Marion Cooper of Kendallville, Ind., at Albion, Ind., August 1.

DOUGLAS ARCHER LEHMAN, M.D., Harrisburg, Ill., to Miss Hazelle Lane of McLeansboro, Ill., June 18.

REUEL JAMES TANQUARY, M.D., St. Louis, to Miss Eva W. Robertson of New York City, at Effingham, Ill., July 19.

WARREN GORDON MCPHERSON, M.D., Bement, Ill., to Mrs. Rothmeyer of Denison, Tex., at Gainesville, Tex., July 10.

Deaths

ZEPHRIM ROULEAU, M.D., Victoria College, Coburg, Ont., 1872; died at his home in Manteno, Ill., July 17, from angina pectoris, aged 66.

HIRAM C. FISHER, M.D., Medical College of Ohio, Cincinnati, 1868; of Metropolis, Ill.; died at the home of his son in Jonesboro, Ark., July 9, aged 75.

ALVA C. TRUITT, M.D., Kentucky School of Medicine, Louisville, 1882; of Sterling, Neb.; died at the home of his brother in Shelbyville, Ill., June 18, from locomotor ataxia, aged 55.

PHILLIP O. PORTER, M.D., Long Island College Hospital, Brooklyn, 1875; of Springport, Mich.; a member of the British Gynecological Society; died in Chicago, July 14, from heart disease, aged 61.

ROBERT HENRY BIGGER, M.D., University of Victoria College, Coburg, Ont., 1866; for twenty-seven years a practitioner of Indianapolis, and later of Carrollton and Mount Vernon, Ill.; died in Los Angeles, July 27.

ROSE WILLARD, M.D., Northwestern University Women's Medical School, Chicago, 1891; a member of the Illinois State Medical Society; assistant professor of gynecology in her alma mater; died at her home near Belmont, Downer's Grove, Ill., July 21, aged 46.

JAMES LINN, M.D., Cincinnati, 1840; who established the first drug stores in Hillsboro, Pana and Oconee, Ill.; a surgeon of volunteers during the Civil War; an active practitioner of medicine for near sixty years; died at his home near Oconee, July 20, aged 98.

HARLON JUSTIN MORRILL, M.D., College of Physicians and Surgeons, Chicago, 1902; of Chicago; was found dead in a rooming house in Cicero, August 4, aged 45. The coroner's jury returned a verdict of suicide from narcotic poison, while despondent on account of the death of his wife.

FREDERICK AUGUST LEUSMAN, M.D., College of Physicians and Surgeons, Chicago, 1889; a fellow of the American Medical Asociation and American Academy of Medicine; formerly instructor in genito-urinary diseases in his alma mater and professor of clinical and genito-urinary surgery in Jenner Medical College, Chicago; attending surgeon at the German-American Hospital; died in St. Joseph's Hospital, August 3, from heart disease, aged 60.